"GETTING STARTED IN MEDIUM WAVE DX'ING"

"Getting Started in Medium Wave DX'ing" is a newly-revised reference manual designed specifically for beginners in the hobby and for those new to the National Radio Club. It is comprised of numerous articles on the introductory phases of many aspects of the DX'ing hobby, from domestic and foreign DX to verifying and taping DX to safety hints. Every effort has been made to include the most popular and useful articles. We wish to thank the following authors whose works make up the contents of this manual: Jerry E. Conrad, Page Taylor, Russell J. Edmunds, Robert Foxworth, Andy Rugg, Jerry Starr, Jay Murley, Cesar Objio, Ken Brownless, Ronald F. Schatz, and Chuck Hutton.

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The NRC has numerous other articles dealing with the subjects of DX-related topics in a variety of sub-areas, in addition to our Receiver Manual and Antenna Manual. Many of these articles are available through the NRC Reprints Service, which makes xerox copies available at a nominal charge. These articles are the work of members past and present, most of which appeared originally in DX NEWS, and have been updated as necessary for each subsequent printing of this book. Many articles which are the work of non-members, or are of a highly technical nature may be found in the NRC Monographs series. A complete list of all NRC publications with the exception of NRC Monographs may be obtained from the NRC Membership Center, P.O. Box 118, Poquonock, CT 06064. Orders for these publications should be sent to the NRC Publications Center, P.O. Box 401, Gales Ferry, CT 06335. Monographs List requests and orders go to NRC Monographs Service, P.O. Box 127, Boonton, NJ 07005, and are restricted to members only.

Membership in the NRC is open to all interested medium wave DX'ers. Membership dues, which help to defray the costs of club operations and publication of DX NEWS, the bulletin of the NRC which appears 50 times per year are payable for domestic first class delivery, and foreign surface or air mail. Current dues rates may be obtained from the NRC Membership Center. A $1.00 fee is charged to all new members to cover the costs of processing the application. New membership entitles the DX'er to a copy of this book free of additional charge.

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Welcome to the NRC! We trust the material contained in this New Member Booklet will introduce you to the basics of several aspects of the BCB DX'ing hobby and enable you to become better acquainted with the NRC.

Many NRC members are interested in Latin American, Trans-Pacific or Trans-Atlantic Medium Wave reception. If you are primarily interested in DX'ing domestic stations, the NRC DOMESTIC LOG is a must.

The NRC NIGHT PATTERN BOOK shows the nighttime directional antenna patterns for more than 1400 AM stations operating during darkness hours in the USA and Canada. This book contains 76 pages of oversized pattern maps, 8½ by 14 inches in size, in addition to several pages of technical articles describing the significance of patterns in station operation, the rules for channel allocation, and the relationship between patterns, decibels and S-units. No single publication has ever presented so much unique broadcast band DX information as the NRC NIGHT PATTERN BOOK.

The NRC is frequently called upon to recommend the "best receiver" for BCB DX'ing; unfortunately there is really no such receiver. As we frequently point out, the best receiver depends largely upon your individual requirements and circumstances. The rural DX'er interested only in US domestic stations and who is located far from any powerful locals will be able to achieve good results with a MW receiver not of the communications variety. For the foreign stations on "split" frequencies, or for DX'ing from a city area with a bad local problem, you are best off with a communications receiver. Of all the good communications receivers on the market and in use by the NRC membership, the best compromise between price and performance is the Hammarlund HQ-180(A), now available on the used market for approximately $250. The HQ-180(A) tends to overload in the presence of powerful locals, but this problem has been successfully overcome even in the worst cases by the use of a good loop antenna. We suggest purchase of the NRC Receivers Manual to assist you in this area.

The best loop antenna available from the point of view of performance and ease of operation is the NRC FET ALTAZIMUTH LOOP, construction plans for which are available as an NRC reprint. The FET Altazimuth Loop is relatively large, measuring 35 inches on a side, and requires some electronic and mechanical skill for construction; if you haven't enough space, an alternative choice is the NRC 2-foot loop. If your name is Elmer Fudd and you are "all thumbs", you may be interested in a commercial product called the "Space Magnet" which sells for approximately $45.00 from Worcester Electronics Laboratory, RD #1, Frankfort, New York, USA. Air core loop kits are also available for those of you who fall between these two extremes. The pros and cons of these antennas will be found in the NRC Antenna Manual; we suggest you read them carefully before making a final loop decision.

Those who wish to pursue the more technical aspects of MW DX'ing, such as equipment construction projects, original research into MW propagation and auroral effects, or mechanical filter conversions of receivers to "state-of-the-art" receiving equipment, are urged to consult the NRC REPRINT LIST of more than 100 feature and technical articles contained in this booklet, which will enable the inquisitive DX'er to obtain absolutely unique information merely

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for the cost of Xerox and postage.

The Frequency Check List is a regular feature in DX News and is of immeasurable aid to the DX'er since it shows regularly scheduled tests from many US domestic stations. This is an ideal method to build your log in a hurry.

Also available through the NRC Reprints Services are several Latin American station lists by geographical area. These include Glenn Hauser's "Mexiglenn List" of Mexican stations; the "Cubamaitien List" including stations in Cuba, Haiti and Jamaica; the "Tica Teca List" featuring Belize, Guatemala and Costa Rica; and Cesar Objio's Dominican List. All of these lists are planned for inclusion in a new L A Log which is anticipated during the 1975-1976 DX season.

Official NRC stationery and reporting forms are available; contact HQ for price information.

We wish you the best of luck in your DX'ing activities, and we expect to be reading of your DXploits in DX NEWS.

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WHO ARE MWA AND SAH?

The following list of abbreviations and technical terms is designed to make DX NEWS more understandable to the New Member. These abbreviations have evolved from our membership over a period of some 40 years and result in a substantial saving of space in DX NEWS.

AN-All night
AXR-Auxiliary transmitter
BBC-British Broadcasting Corp.
BCB-Broadcast band
BPC-Former Boston Publishing Committee
CBC-Canadian Broadcasting Corp.
CE-Chief Engineer
CH-Critical Hours; period when some stations change power or antenna, 2 hours presunrise and 2 hours post sunset.
cl-classical music
CM-Coverage Map; showing primary & secondary coverage areas
CP-Construction Permit; new station
CPC-Courtesy Program Committee; NRC group which arranges special tests from hard-to-hear stations.
c/w-Country & Western music
CX-Reception conditions
DA-1 Station with unlimited hours of operation; same pattern day and night.
DA-2 Unlimited hours of operation; but different pattern day and night.
DA-N Unlimited hours; directional pattern nights only.
DF-Direction finding
DOT-Department of Transport(Canada)
DU-Down Under (Australia & N.Z.)
DXN- DX NEWS; magazine of the NRC
EBU-European Broadcasting Union; station list produced by them.
ET-Equipment test
FBIS-Foreign Broadcast Information Service; radio arm of the CIA, produces station listings.
F/C-Frequency check
FCC-Federal Communications Comm.
FFC-French Canadian station
Freq-frequency
f/up-follow up reception report; a copy of initial report sent to a station after no response.
GCP-Great Circle Path
GCIB-Great Circle Initial Bearing
GM-General Manager
GSTQ-God Save the Queen
Het-Heterodyne; see tech terms
HTL-How to Listen to the World
ID-Station identification
IRC-International Reply Coupon; form of return postage available from Post Office.
kHz-KiloHertz; same as kilocycle
Kw-kilowatt; 1,000 watts
LA-Latin America(n)

LPC - Louisville Publishing Committee

LPRT-Low Power Relay Transmitter; 20 or 40 watt remote & unattended Canadian station
LW-Longwave; band below 529 kHz
MM-Monday morning
MOR-Middle of the Road music
MW-Medium Wave
MX-Music
NARBA-North American Regional Broadcasting Agreement
ND-Nondirectional antenna pattern
NJPC-North Jersey Publishing Committee;
NRC-National Radio Club
NSP-No Silent Period
NX-News
o/-over
OC-Open carrier; no modulation
PD-Program director
PoP-Proof of performance; test conducted by stations upon request of FCC.
PPC-Prepared card; verification card prepared for DX station to sign & return.
PSA-Presunrise authorization; special provision allowing station s/on before local sunrise with reduced power.

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QRM-Interference
QRN-Static, natural or man-made
QSB-Fading
QSL-Verification of reception
RC-Regular monthly check
RR-Rock and Roll music
RS-Regular schedule
RX-Receiver
SA-South America(n)
SASE-Self addressed, stamped envelope
SC-Top 40 record survey list
SM-Sunday morning
SM-1 & SM-2 Space Magnet antenna
S/on-Sign on
S/off-Sign off
SP-Silent Period
SRS-Sunrise skip reception
SSB-Star Spangled Banner; also single side band
SSS-Sunset skip reception
Stn-Station
SW-Shortwave (above 1620 kHz)
TA-TransAtlantic
TC-Time check
TP-TransPacific
TT-Tone test
TVI-Interference produced by TV receivers; sounds like a buzz every 15.75 kHz
u/-under
unID-Unidentified
Unn-unneeded station
v/c-Verification card, typed
v/f-Verification form letter
VJ-Vane Jones station list; published by H. Sams Co.
v/l-Verification letter
v/q-Verification card, printed
VOA-Voice of America
v/s-Verification signer
w/-with
WRTVH-World Radio TV Handbook
WWV-Standard time and frequency station on SW; gives info on aurora 18 minutes after hour
WX-Weather
XR-Transmitter
YL-Young lady
73-Best regards

MISCELLANEOUS TERMS:

Bootleg - see pirate
Drake - Hard rock top 40 record format produced by Bill Drake, a leading consultant
Loop - Loop antenna for broadcast band reception; also means direction finding
Pattern - Map showing station power in various directions; see NRC Night Pattern Book
Pirate - Unlicensed radio station; some are commercial offshore ship operations, others are illegal amateur operations
Primary coverage - The area of strong groundwave reception from a radio station
Ramadan - Moslem holy month in late fall; many Arab stations stay on the air all night
Secondary coverage - Area with good reception at night via skywave
// - Parallel operation; stations carrying identical programming

LANGUAGES:
AA-Arabic DD-Dutch EE-English FF-French GG-German II-Italian
PP-Portugese RR-Russian SS-Spanish

SMALL LETTERS USED IN VERIFICATION SIGNERS LIST:
c-hand written or typed card
f-form letter, mimeo'ed, etc
h-signer is a ham operator
m-included CM
n-not in English
p-prepared card made by DX'er and signed by station
q-QSL card printed by station
r-Verification text written on DX'ers reception report
u-result of follow-up report
v-QSL vague or unsatisfactory
e-In English from a non-English speaking country

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SPECIAL TECHNICAL TERMS:

A_{Fr} - Fredericksburg index of geomagnetic disturbance; the best measure of high latitude auroral conditions; broadcast from WWV at 18 minutes past each hour.

Aurora, auroral oval - High latitude region of extreme absorption to Medium Wave signals; related to Northern Lights and magnetic storms.

Beverage antenna - Special type of antenna for Long Wave & MW DX reception; very long, low, single wire with special ground connections.

D region - Region of ionosphere where daytime MW signal absorption occurs. Height: 40-100 kilometers; involved in auroral disturbances.

E layer - One of the main reflecting layers for MW signals at night. Height: about 105 km. above the surface of the Earth.

E20 - Computer program to predict dawn-induced fadeout times of specific stations.

FET - Field effect transistor; used in amplifier for a MW loop.

FET AAZ loop - FET Altazimuth loop antenna; high gain and very deep nulling capabilities.

F layer - Main reflection layer along with the E layer; responsible for night MW DX reception. Height varies: 260 to 400 km.

Geomagnetic - Pertaining to the Earth's magnetic field; strongly affected by auroral disturbances.

Ground wave - MW signal component which travels along the surface of the ground; most daylight reception by this mode.

Heterodyne - Audio tone produced by two stations close in frequency; pitch of the tone depends on frequency separation: two stations 3 kHz apart (i.e., 770 & 773 kHz) will produce a 3 kHz audio tone in the receiver.

MF, Mechanical filter - Electronic component which produces improved receiver selectivity for separation of stations on close MW frequencies.

MwA - Midwinter Anomoly. A well established, but little understood phenomenon, which produces days of unexpectedly weak signals during midwinter months; most evident during high sunspot counts.

Null - The direction of minimum signal pickup from a loop antenna; the act of eliminating reception from a station with a loop antenna, e.g., "WABC was nulled out".

SAH - Subaudible heterodyne produced between stations so close in frequency that the beat-note tope is not audible; sometimes shows up as the wavering of the S-meter needle; best displayed on an oscilloscope with a long persistence phosphor.

Skywave - The signal reflected from the layers of the ionosphere; primary mode of MW reception at night, as distinguished from groundwave.

Splash, sideband splash - Crashing sound produced by programming of a strong station on a nearby frequency; reduced or eliminated by mechanical filters, a loop antenna, or both.

LETTERS BY FREQUENCIES:

A-approximate freq. M-measured freq. V-frequency varies

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Musings of the Members: This column is devoted to informal discussion of DX-related topics. It is not for formal listing of DX, Verie-Signers, etc. Line limit is 20 lines of DXN copy, although overages of an occasional nature are allowed. Submissions must be double-spaced.

Domestic DX Digest: A tabular column for exchange of DX info. Includes all types of station info EXCEPT verie-signers. Submissions should be kept brief and informative. Loggings of regular or semi-regular DX are not material for DDXD, nor are harmonics of BCB stations unless they fall INSIDE the BCB OR if they contain station change info. Loggings over 30 days old will be deleted as will other non-conforming submissions. Contributor should list his equipment, and the location from which his submissions were received. Also, name (last only) should appear after each listing. U.S. & Canada only.

International DX Digest: A tabular column for exchange of FOREIGN DX info. Alaska & Hawaii can be used in either IDXD or DDXD, although with the exception of log-change info the proper place is IDXD. Generally the content is somewhat longer for each item than DDXD, but the same rules apply regarding regular and semi-regular DX and harmonics. Same for time periodicity of data as well as equipment, location and identification requirements. IDXD also features a Verifications section where such data as signer, enclosures, length of time in transit or other helpful data may be listed.

Verie-Signers: This column is simply a tabular listing of DOMESTIC verification signers, which also includes info as to they type (letter, card, form, etc.) of the verie. Submissions should be restricted so as to eliminate duplication within any 4 to 6 month period.

DX-CHANGE: A swap-and-sell column. Any member having items of a DX nature to sell or buy may submit ads to the column. Likewise non-members who have items of interest for members to be sold may use the column.

Supremacy Ratings: (Foreign) includes a listing of participating members who supply their stations verified totals for compilation. Mostly lifetime totals.

Domestic Supremacy Ratings: Includes listings of members logged, taped, and verified totals for Domestic DX. Includes both single-location and lifetime totals, by separate listings.

CPC TEST SCHEDULE: Lists all the TESTS reported by the Courtesy Programs Committee. Members of the Committee send notifications of special tests of which they have been notified by stations for the membership to look for.

ALL COLUMNS: NRC recognises both tapes and veries as proof of reception, but this is in no way to be understood as imparting any implied equality of the two. DX reported by members is assumed to have been done exclusively at the QTH noted in the report unless otherwise specified. Station totals listed in SR columns of Musings are likewise assumed to be one-location totals (although this need not be the DX'er's actual residence, as long as one location is common).

Graveyard DX Achievements: Includes listings of members best loggings on the local channels 1230, 1240, 1340, 1400, 1450, & 1490 kHz., on a rotating basis, with overall channel totals once annually.

AM Switch: Covers all station data changes for stations in the U. S. & Canada. Appears monthly in supplement to DDXD and Domestic Log Updaters. Includes such other useful information as changes in ownership and minor construction permits which might give advance indication of testing or of further changes.

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The Compleat DX'er... Systematised DX & Record-Keeping

by Page Taylor

Every DX'er devotes some amount of time to the act of preparation or reference to aid him in his quest for DX. He may spend only the smallest amount of time in doing so, in contrast to some DX'ers who spend nearly as much time at research and preparation as they do at the dials. Nevertheless, the time is spent at the books. He may not make his own charts, lists, tables, or graphs, as we will recommend here, but he does do something. Most DX'ers have certain reference materials which they consider basic. They may choose the World Radio-TV Handbook, or the FBIS Lists or IRCA Foreign Log for International DX. If they specialise still further, they may use the NRC Latin-American or Trans-Atlantic Logs. If their interests are in logging North American "domestic" stations, they may choose White's Radio Log, or the Vane Jones Log, from which they will graduate to the NRC Domestic Log. Any or all of these can be considered as necessary and basic. If there is an intention to DX North America sunrise or sunset, the appropriate maps are in order, just as are the world sunrise-sunset maps and/or tables for the serious International DX'er. One whose interests lie in DX'ing North America may well want to use a frequency-check list as well, while the International listener equipped with a loop antenna may need a great-circle map prepared for his location. Regardless of the listener's fancy, the NRC Night Directional Antenna Pattern Book will prove to be an indispensible aid.

There are many varied reference sources and materials published for the radio hobbyist, which are widely accepted in DXing circles as basic "tools of the trade". The real purpose of this article, however, is to delve more deeply into the areas of reference and preparation for the DX session so that the least amount of time is wasted. Included here will be suggestions for implementing research techniques far more subtle than are generally used; however, the benefits derived from these techniques will become quickly obvious in the form of more fruitful DX'ing hours, and, correspondingly, a more thorough working knowledge of one's own DX conditions. In time, the DX'er becomes so familiar with the procedures and materials discussed here that much of the work is done from memory or by habit -- the DX dial becomes more familiar; the amount of time spent on stations already logged waiting for an ID becomes minimised.

No claim is being made that reference is a cure-all, or that it will allow you to hear everything. However, careful work done away from the dials will allow you to have a far better chance at hearing what is possible, and to be able to ignore what isn't.

The material to follow is presented in a progression of "levels", allowing each DX'er to find his own particular level of attainment and work to the level above in each case, first for hobbyists specialising in International DX.

Level One: The DX'er beginning on this level should have in his possession copies of the World Radio-TV Handbook, the IRCA Foreign Log or the FBIS Lists. A basic familiarity with the format of these publications is necessary. In this way, it becomes increasingly apparent which stations have actually been heard in the past by other DX'ers, as well as which stations may have a chance at being heard. A careful perusal of either or both of these publications will soon have the DX'er becoming increasingly aware of the most favourable times of reception for certain desired areas of the world, schedules, languages, and time zones. A casual reading of this material will soon have the listener recalling a goodly number of pertinent facts abcut stations and countries with which he may have had only a slight familiarity in the past. It will be seen that many desirable "catches" in Central America close down at 0400 GMT; Brazilians may come on the air as early as 0800 GMT, and Venezuelans by 0830 or 0900 GMT. Many East European stations are broadcasting as early as 0300 GMT, Central Europeans by 0400 GMT, West Europeans by 0500 GMT and Iberians by 0600 GMT. Many Africans will not be on the air until 0700 GMT.

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Level Two: Propagation: Can you recognise "auroral" conditions? A good high-latitude opening? Auroral conditions can be recognised by blockage of stations to the north of the DX'ers location which are normally heard. Perhaps the Canadian stations have "mysteriously" disappeared from the dial; or, if in Europe, the Scandanavian signals suddenly become inaudible. Under such conditions, many stations to the south either not normally heard due to blockage from the northern stations, or because of nearby transmitters, will be heard. In North America, receptions of unusual stations in Central America, the Caribbean, and Northern South America may be had. In Europe, North African and Mediterranean area stations will be favoured. A good high-latitude opening will produce receptions of Scandanavian, German, British and East European stations from North America, as well as good North American conditions from Europe, perhaps as deeply penetrating as KSL-1160, KOMO-1000 or KING-1090. A DX'er should be aware of the type of conditions he is experiencing at all times, before he endeavours to hear a station impossible under the prevailing propagation.

Level Three: Now, construct two separate lists, each containing twenty "target" stations which you would like to hear. Title the first list, "AURORA". Title the other list "HIGH-LATITUDE". Choose your twenty stations from the WRTH or IRCA Foreign Log, based on receptions that you consider possible from your area. Your list should contain all information which you consider essential to your logging of the station -- call letters,(if used), frequency, power, schedule in your local time, language used. Keep these two short lists near the receiving station; after the type of conditions have been determined, choose the appropriate list, and check off each station as heard. If you find that there are several which continue to elude you, it would be wise to check the source of information again, to try to determine why the station has not been heard. Perhaps your desired station broadcasts with too little power to reach your area; it may emply a directional antenna not favourable to your area, or there may be too much interference on the channel to warrant reception. It is wise to choose "split" frequencies as target stations, since these are often times easier to hear than far-distant Trans-Continental or Trans-Oceanic stations working on even (10 kHz.) frequencies in North America, or Copenhagen Plan channels in Europe. When some degree of proficiency has been attained at constructing these "want lists", perhaps you would like to expand the number of desired stations.

Level Four: So you want to hear all continents on the medium-wave band? A geographical list will aid in accomplishing this goal, used in concurrence with worldwide sunrise-sunset maps. Now, title separate sheets with the name of each continent. Again referring to our sources, choose two or three most viable stations from each area, taking care to list only those with schedules conducive to reception during times of the greatest darkness-to-darkness path. Keeping abreast of the International headline news often aids the radio listener in hearing Inter-continental DX not otherwise possible. The high-powered Israeli transmitter on 737 kHz. was heard widely in North America during the crisis in the Middle East of the autumn of 1973. Stations in parts of Africa and the Middle East embracing the Islamic culture often remain on extended broadcasting schedules during the Islamic Holy Month of Ramadan, as well as during Islamic New Year celebrations. Many Latin-American stations remain on the air on an extended basis for certain Feast Days, particularly around the times of the Christian religious holidays of Christmas and Easter. These factors should all be brought to bear upon construction of this set of reference lists.

Level Five: Tables constructed according to favourite listening times can prove to be useful aids. Separate lists should be constructed in one-hour listening blocks for sunset and late evening DX. These chronological listings will serve as a memory aid to sign-on and close-down times of desired stations, as well as listing those stations which are best received during these time blocks by other listeners in your area. Any other pertinent notes which you have gleaned about the desired receptions from club publications, other DX'ers or standard reference sources should be included on the list as an aid in identifying the desired station.

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Several examples of such lists are presented here for the reader's perusal:

SUNSET

Time(GMT)	Freq.	Location	Other
2200-	1529	Vatican	news, Italian c/d 2215; Madeira remaining
2300	533	Algeria	AA, //548; late during Ramadan
	1525	China	2300 ID, tuning signal, Russian programming; USSR also.

LATE EVENING

Time	Block	Freq.	Location	Other
0400-		548	USSR	Odessa+others; Majak; listed c/d 2300; on 0000Z
0500		1385	Kaliningrad	on 0400; Majak this time
		827	Sofia	on 0400; Foreign Service, Greek listed; Arabic heard
0700		665/737	Iceland	s/on; Interference Portugal/Spain
		1295	Manx Radio	s/on
0715		584	Faeroes	s/on; Madrid interference

fig.1 ⌂

Level Six: In certain specialised instances, it has been found that the easiest and most comprehensible method to employ in searching out elusive DX targets is that of constructing a graph. A simple bar graph can show at a glance the stations operative on a chosen frequency during any of the darkness hours at the listener's location most likely to produce such receptions. Thus, a study of the example to follow will immediately show that Berlin is a perfectly conceivable target from North America on 1484 kHz., the International Common Frequency. It will also be noted that during certain months of the year, Gibraltar and Senegal are also within the bounds of possible reception. It becomes advisable once again to use these personally-tailored graphic presentations in concurrence with a set of worldwide sunrise/sunset maps, to determine those receptions most viable from the listener's own location. Although it is realised that such persevering work may become time-consuming and tedious, the dividends of unusual and rarely-reported stations will shortly become obvious.

fig.2 1484 kHz ⌂

If the DX'er has gained a thorough grounding through the six levels suggested here, he should have arrived at a high degree of sophistication as an International medium-wave DX'er; if he continues to revise and up-date the information contained in his reference sources, he will arrive at the ultimate pleasure of adding many elusive and rare stations to his totals.

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How can some of the methods previously suggested for International DX'ers be put to use by the listener specialising in receptions of United States and Canadian stations? The methods are pretty much the same, but can be altered for this specialty. Since there are infinitely more stations possible, a bit more involved study of the band conditions must be undertaken by the North American enthusiast . For those in pursuit of this most interesting facet of the hobby, many new and unique variables come into play: network affiliations, highly directional antenna patterns, foreign language programming, crowded channels, and rapidly changing programme formats. Programming in the United States and Canada include such diverse segments as Cherokee Indian, Cree, Eskimo, local variants of French within the Province of Quebec, educational, religious, country music, discussion, telephone talk shows, rock music, "easy-listening" music, Negro-oriented programming including "soul" and rhythm-and-blues music, and all-news, just to name a few. Station powers in some cases are drastically reduced at local sunset to prevent interference to the high-powered fulltime station(s) on the same channel. As an example, WSJC in Mississippi, operating during daylight hours on 810 kHz. must reduce power to only 250 watts at sunset in Mississippi. This station normally operates during daytime hours with the maximum legal power of 50,000 watts. If a DX'er armed with this information tunes to 810 kHz. several minutes prior to WSJC reducing power, chances are good that he will be able to log the station. With all the confusion and crowding normally associated with broadcasting in the North American continent, how can one hope to sort it all out into some reasonable order? It will be seen from the ensuing paragraphs that just about the only way to succeed in increasing one's domestic totals is through a systematised and progressive "level" approach.

Level One: Before a listener can hope to log very much North America DX, he needs to become thoroughly familiar with the condition of the dial at his location. He should have in his possession a copy of the National Radio Club's Domestic Log or Vane Jones North American Station Log. Begin by constructing a list by frequency beginning with 1600 kHz. and working down in 10 kHz. increments to 540 kHz. While listening during nighttime hours, fill in next to the frequency the station or stations heard which seem to be the loudest, including locals. Add other information as it becomes available, such as format of programming, languages if other than English, and ID times. It is not recommended that other stations be added to this list as they are heard - this will be done at a later time when methods of Logging and Record-Keeping are discussed. Keep this list as a basic reminder of the "regular" stations heard from your listening post. Now, do the same for all stations heard within daylight hours. You will find that these receptions are normally from the 200-300 miles (322-483 kilometers) range, and may be extended under optimum conditions in the winter months to a maximum practical range of nearly 1000 miles (1610.31 kilometers). Samples of the form to be employed follow:

	DAYTIME REGULAR RECEPTIONS			
1600	WWRL	New York, N.Y.	5000 watts	Negro programming
1590	WERA	Plainfield, N.J.	500 watts	daytime only; local oriented
	WQQW	Waterbury, Conn.	5000 watts	"easy-listening" music
1580	WCRV	Washington, N.J.	1000 watts	daytime only

	NIGHTTIME REGULAR RECEPTIONS			
1600	WWRL	New York, N.Y.	5000 watts	Negro-oriented
	WUNR	Boston, Mass.	5000 watts	religion;some Spanish
1590	WQQW	Waterbury, Conn.	5000 watts	"easy-listening" music
1580	CBJ	Chicoutimi,P.Q.	10000 watts	CBC French
1570	CKLM	Montreal, P.Q.	50000 watts	French; rock music

fig.3 ⌓

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Level Two: After a thorough grounding in local dial conditions has been gained, the listener may proceed to a more sophisticated means of increasing his "domestic" loggings. Since most listeners, due to commitments, must decide on a listening period, either at sunset or late evenings, it becomes increasingly obvious that some degree of specialisation must now be attempted. The easiest and most beneficial manner in which to deal with increasing one's loggings is through a basic understanding of propagation. If most stations to the north of the DX'ers location seem to be blocked by rarely-heard stations from the south, "auroral" conditions prevail, and other stations from the same geographical area should be sought. If, on the other hand, an unusual number of stations are being heard from certain states, cities or specialised areas, concentration during the DX session should be on these areas. Classical trademarks of "auroral" conditions will find a higher than usual background noise level, somewhat like a "hissing" sound, strong regularly-received stations to the north either missing or highly disturbed, and plentiful receptions of regional-channel stations in the Deep South. Such openings may also become apparent at local sunset, when regularly-received stations on regional channels are replaced by country-and-western music, and announcers with deep southern "drawls". Depending on the listener's favoured DXing period, lists of stations which may well be received during auroral conditions should be drawn up. These lists may be done according to the geographical area being sought, such as "MOST-WANTED KENTUCKY DAYTIMERS", or "NEEDED FULL-TIME STATIONS IN FLORIDA". If most DX'ing is done at local sunset, these lists may be drawn up according to month, by sign-off times of wanted stations. Such an example follows:

DECEMBER (EST):

1700: 1500 kHz.: WLWL
1510 kHz.: WEAL, WYRU, WLKR, WLGN
1520 kHz.: WKNT, WINW, WTRI

1715: 1500 kHz.: WKBX, WEAC, WVOC, WGIC, WSWS, WZBN
1510 kHz.: WSJW
1520 kHz.: WIDD, WNMT, WDSL

fig.4 ⌂

Level Three: After some considerable time has been spent exploring the dials, the listener will notice that certain frequencies seem to be somewhat more free of interference than others. A careful record of these "semi-clear" channels should be made, along with information compiled from published references about stations still needed on these frequencies. In a great many areas of North America, it has been found through the years that 1580 kHz. is one of the spots on the dial with the greatest possible yield of stations signing off at local sunset. On a good night, when the band is fairly quiet, coast-to-coast receptions of daytime stations has been obtained on this frequency. It is advisable to choose either this frequency or another which you may find to be relatively clear of interference, and persevere through an hour's worth of 15-minute sign-off segments. As many as fifteen new catches may be gotten in one sitting, using this method. The same method may be employed for late-night listeners, when certain domestic channels become less crowded. A check of Canadian Broadcasting Corporation frequencies following 0107 EST sign-offs in Ontario and Quebec will immediately yield such possible receptions as CBU/XETRA, 690 kHz., KRMG/CBX/KCBS/WKIS, 740 kHz., XEMO/KONO/HILR/XEUN, 860 kHz., WINZ/KHOS/CJGX, 940 kHz., and KKJO/KKHI/XEBG/HJAX/WKFE or 4QD, 1550 kHz., all dependent upon the location of the DX'er and prevailing conditions.

Level Four: Many smaller stations in North America still schedule regular monthly or bi-monthly frequency checks. Such checks are conducted between the hours of 0000 and 0600 EST (0500-1100 GMT), and normally consist of a standard audio tone (usually 1000 Hz.) for a duration of fifteen minutes. Station identification may be given at the beginning and end of the test, although in some generous cases, identification is made as frequently as one-minute intervals. A list of frequency checks is compiled annually by NRC and IRCA; reference to these lists should be made by listeners DXing these hours to aid in identification of testing stations, as well as in selecting probable "target" DX stations.

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Level Five: It becomes desirable at this juncture to construct another list, based on "at-the-dial" experience, of stations which tend to act as "indicators" of certain types of openings. Such openings may favour reception of stations on very high latitude paths into Canada's Maritime Provinces, or stations not often heard from such diverse locations as The Pas, Flin Flon, North Battleford, Peace River, Edson, Dawson Creek, Prince George, Whitehorse, Yellowknife, or Frobisher Bay, depending again on the location of the listener. A sample list of "indicator" stations showing such conditions follows:

"Indicator Stations" Favoring West Coast North America
(from author's location in New Jersey)

Frequency	Station
640	KFI
690	CBU/XETRA
740	CBX/KCBS
790	KGHL (frequency check)
850	KOA
860	XEMO
940	CJGX
960	CFAC
1000	KOMO (Monday morning only 0300 EST+)
1020	KGBS (Monday morning only)
1030	KTWO (Monday morning to 0200 EST)
1060	CFCN (Monday morning only)
1070	KNX
1090	XEPRS/KING
1140	KRAK/CKXL/KGEM (Monday mornings only)
1160	KSL (noticeably louder than usual)
1180	KOFI (Sunday mornings only)
1190	KRDS/KEX (Monday mornings)
1260	CFRN
1270	CHAT
1530	KFBK
1550	KKHI
1560	KPMC

fig.5

It may be observed that such a list may be readily modified for anyone's peculiar set of DX'ing circumstances. If 75% of the listed stations are audible, it is then fairly indicative of an opening to the area in question, and more stations, particularly those on regional channels, may then be sought.

Level Six: There is no substitution quite as valuable as the "chronological list". Although admittedly time-consuming in setting up, the results are often pleasantly surprising. With paper and North American station references at hand, the DX'er need now set down his desired stations by one-hour time blocks, assuming late evening listening times. This listing will incorporate all possible frequency checks, close-down times for desired stations, special DX test programs, and any other factors which one may glean and consider of "tip-value" in producing a logging of the station(s) in question. Such a sample list may look like this:

Integrated Want List - Second Monday Morning

0100-0200 (EST)	550	KFYR	"K-Fire", rock format
	940	CJIB	CJGX "GX-94" indicator
	960	KOOL/KAEL	CFAC "Calgary's Brand of Radio" indicator
	990	WCAZ	Frequency check (0115-0130)
	1020	KGBS	indicator, watch for A3Z from 0300 EST
	1030	KTWO	NBC, off 0200 EST; heard 2-3 times per year
	1340	WAGN	Frequency check (0115-0130 EST) Michigan

fig.6

A little time spent away from the receiver at "systematising" one's DXing efforts can result in an entirely new and more productive perspective on the hobby.

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III: LOGGING AND RECORD-KEEPING

Now that the DX'er has learnt the systematised approach to the hobby, he must decide upon a means of "logging in" his newly-heard stations. Some means of keeping a permanent record of stations received becomes a necessity, for several reasons. Such a permanent record will ultimately permit the DX'er to determine if a station is "new" or already in the log; secondly, a neat, orderly method of record-keeping allows the statistics-minded to compile information about his catches that may otherwise become a burdensome task. Formats of this log are as varied as the listener's own ingenuity. The record should be made as legible and graphically-appealing as possible.

The initial job of "logging in" stations is done at the receiver under actual listening conditions, and may take the form of scraps of paper, prepared forms, or modified amateur radio logbooks. If the hobbyist enjoys receiving QSL cards or verification letters from his stations, it is advisable to copy down the required program information on still another sheet of paper, to avoid the pitfall of containing too much information on the same sheet, thereby losing "the forest for the trees". If stations are taped, the counter reference number of the station should be entered on the logging sheet for future reference. A sample of a representative night's logging follows (it is wise to keep in mind that for logging forms, reduction to extreme simplicity provides for easier reference at a later date):

7 November 1973 Sunset session Tape: BASF C90 Side One

(Tape:260) 790 WTNC 1708 EST ad for Ford Truck Center; WAEB mixed; NEW - enter
(Tape:330) 910 WORD 1720 Spartanburg local weather; in the clear; rarely hrd
(Tape:530)1525 China 2300 GMT potent with tuning signal, "Govorit Pekin" - nice
(Thru 570) " " usual format, male/female announcers in Russian; East is Red.
954.7 4VCD news in French through 0002 GMT, when ID. Surprise, tape not running---!&*¢@ (remainder deleted)

fig.7 ⌂

The above example is a copy of the actual logging sheet used for the date quoted; obviously, many more stations were heard, but only the very important or unusual loggings were noted on the sheet. Many other routine sunset domestic and Trans-Atlantic stations were heard, but none needed or desired for tape.

Several alternative methods are available for keeping the permanent log. Some DX'ers prefer to enter all information on index cards, alphabetised by call letters or countries in which there are no assigned call letters. Others use a loose-leaf notebook arranged by frequency, interpolating "split" frequencies where necessary.

What type of information should be contained in the log? In as much as the minimum of cross-referencing is desireable, the call letters of the station when applicable, location by city,state, and/or country, power in use when heard (if unknown, use listed power), date and year first logged, time, tape reference, signal quality, and sources of interference should be entered. Of course, the final choice of content remains up to the individual DX'er. In certain cases, a simple notebook listing only stations, frequencies, powers and locations will suffice. A sample card log from a DX'er with "data-mania" might look like this:

EAJ8 San Sebastian, Spain 1025 kHz.
8 kW. 0600-0630 GMT 22 October 1973
Tape #15 Side One; #476-593 S7 to 10db/S9
French rock music program "Radio Océan" IDs
Spanish ID at 0630 GMT
A-index 18

fig.8 ⌂

A simplified notebook entry, on the other hand, might appear like this:

1025 EAJ8 San Sebastian, Spain 8000 watts 22.10.73

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The information set down on the logging sheets used while DXing should be kept in a file folder for review once every several months. In this way, all pertinent data from these sheets may be copied into the permanent log or onto the file cards with a fairly regular interval of elapsed time. Once the information is copied out into the permanent log, the old logging sheets may either be re-filed for later analysis or discarded. Many DX'ers enjoy keeping additional records, including such information as "total number of domestic stations heard", "number of foreign stations heard", "number of stations logged in the Netherlands Antilles", "Total U.S. States and Canadian Provinces heard" and "total countries or politically self-governing areas logged". It becomes a simple matter, while transferring information from logging forms to permanent records, to enter a "tally mark" next to the state, province, continent, or politically autonomous region desired, thereby providing the listener with a permanent and continuous record of data regarding the most important achievements to be attained within his hobby. Several examples of such "tallies" follow, executed in the traditional method:

Alabama: 𝍸 𝍸 𝍸 𝍸 111
Alaska: 1
Arkansas: 𝍸 𝍸 111

Alberta 𝍸 𝍸
British Columbia 111
Manitoba 𝍸 𝍸

Germany (Federal Republic): 𝍸 𝍸 𝍸 11
Germany (Democratic Republic): 𝍸 111
Brazil: 𝍸 𝍸 1
Syrian Arab Republic: 111
Dahomey: 1
Costa Rica: 𝍸 𝍸 𝍸 1
Gilbert and Ellice Islands: 1

fig.9

Total Number of Stations Heard - United States: ~~4124~~ ~~4263~~ ~~4675~~ ~~4826~~ 2113
Total Foreign Stations Heard: ~~106~~ ~~346~~ ~~458~~ ~~529~~ ~~678~~ 796
Total Stations Heard - All: ~~1230~~ ~~1579~~ ~~2433~~ ~~2504~~ 2909

As larger totals are reached, the previous total may be lightly struck out, while still allowing the DX'er to see his growth over the months and years of his pursuit.

Since the inception of DX'ing as a hobby of long-distance radio reception back in the 1920's, it has evolved into a loosely-bound pursuit of leisure time with few universally-accepted ground rules. It has been the intent of this article to expose those of similar interests to some of the systematised methods currently in use by some enthusiasts, and is not intended as a sine qua non of DX'ing expertise. Since this hobby has become somewhat liberated from the strict and unimpeachable dictums of the '30's and '40's, the individual DX'er must, in the long run, evolve his own personalised system of logging, "counting" stations, and deciding pretty much for himself that which constitutes a "country" for radio purposes.

But, there remains little doubt that if he is to succeed in his quest for new loggings, he must, at least, become "systematised".

XEHN RADIO
1.130 KC ● APARTADO POSTAL 744
NOGALES, SON. · MEXICO

World Radio History

THE COMPLEAT DX'ER'S REFERENCE LIST

From NRC — The NRC Domestic Log; The NRC Night Antenna Pattern Book; The NRC TA Log; The NRC Sunrise/Sunset Computation Charts (Reprint #M4); **The Mexiglenn List** (1974 List of Mexican Stations).

From IRCA : (P.O. Box 26254, San Francisco, CA 94126): The IRCA Foreign Log; The IRCA Domestic & International Sunset/Sunrise Maps.

From both: **The NRC-IRCA Frequency-Check List; TVI Frequencies** Reprint #M1).

From Other Sources:

World Radio TV Handbook, World Publications, Denmark; available from Gilfer Associates, Box 239, Park Ridge, NJ 07656.

Broadcasting Yearbook, Broadcasting, 1735 DeSales St NW, Washington, DC 20036.

A goof top-flight World Atlas, available from your local bookstore.

A Rand-McNally U. S. Road Atlas, also available from your bookstore.

The North American Radio-TV Station Guide , by Vane Jones, from Howard W. Sams, Chicago, IL. Useful as a supplementary source.

"National Anthems of the World", a record album, available by special order from your local record store.

Copies of various country station lists, available from IRCA or NRC.

ALSO AVAILABLE FROM NRC

Two specially-prepared maps which are scaled on the same map scale as the above-mentioned Sunrise/Sunset maps. These maps denote the locations of all domestic stations on 1570 & 1580 kHz. These two frequencies have proven over the years to be among the best for domestic sunset DX'ing. We have found that these are an invaluable aid in DX'ing. Often the determining factor as to which stations may be audible will be the location of the station with regard to the lines on the maps, as the stations closest on the West side of such lines will likely be the first to come up in their given time period. These maps may be used to copy or trace onto the individual maps, or to make an overlay for them, perhaps of clear plastic.

All orders for NRC publications should be sent to:

NRC Publications Center, P.O. Box 401, Gales Ferry, CT 06335

World Radio History

As many DX'ers know, TV receivers are notorious QRM generators. The interference originates in the horizontal sweep stage of the set, causing harmonics of the picture tubes sweep pulse to radiate for perhaps hundreds of feet. Horizontal sync pulses were 15.750 khz in black-and-white service, and were modified slightly for color service to avoid hetrodyning problems with the 3.579+ mhz color subcarrier signal in the set itself. The color service horiz. freq. is 15,734.264 hz ± .044 hz; this frequency is rigidly maintained. At the same time, the vertical rate was changed from 60 to 59.94 hz for color broadcasting. Note: This applies only to the American NTSC standard of color TV with 525 line pictures. Other TV systems in use in other parts of the world with such as 405, 625 and 819 lines will not produce harmonics at these frequencies. Thus, DXers outside the U.S. ought to not use this chart.

It is still possible that in a few areas, black-and-white transmissions may still be in use, although this is quite doubtful now. The way to check this is to monitor the frequencies 630 and 1260 khz. If the TV set causing your QRM is receiving a B-W transmission, the horiz. osc in the set will be locked to 15.750 khz sync pulses, whose harmonics fall exactly on 630 and 1260 khz. Color transmissions will, on the other hand, cause harmonics to fall a few hundred hz on the low side, and will cause an audible hetrodyne on these two frequencies. (See chart, 40th and 80th harmonic).

This is the most accurate listing of these frequencies to appear in the DX press. NRC's listing that appeared in DX News (18 Nov 1967) carried frequencies only to the nearest tens of hz, and contained some interpolation errors caused by final rounding. The figures in this chart are rounded to the nearest whole hertz. These numbers were obtained by finding multiples of 15.734264 on a calculator. Incidentally, the error caused by using 15.734 as the base figure amounts to about 17 hz per Mhz; not a very great amount.

For the benefit of Longwave, as well as Tropical Band DXers and Harmonic Chasers, who can use these calibration checkpoints outside the standard broadcast band, we're listing the entire rundown up to 4 mhz or so. Despite the accuracy implied in this list, note that these pulses are not spectrally pure, but contain noise sidebands of 60, 120 and so on hertz. Thus the pulses may appear to be tens of hz wide, especially if heard at s-7 or louder.

Elimination of these harmonics, which is more desirable than hearing them, has been dealt with occasionally in past issues of DX News and more thoroughly in the Amateur radio press. The DXers own set may have to be completely shielded around the sides, back and bottom with sheet aluminum (leave clearance around the picture tube, which carries 25,000 volts on the inside shell, this can jump an inch), install leaded glass in front of the CRT in the worst cases, and put filters and traps in the antenna and power leads. Traps and filters are by far the most cost-effective approach. Lafayette Radio carries high-pass filters (for TVI elimination from CB radios etc.) which insert in the antenna lead. The Radio Amateurs Handbook has some help in this regard. (Available from A.R.R.L., Newington, CT 06111, $4.50). Severe cases will occur in apartments, from multiple sets in use, and its doubtful the DXer could shield all these sets. He may have to arrange with the set owner to have a service man do it, with the DXer paying for parts and labor; in a large apartment that could run hundreds of dollars. Receiving-wise, directional loops and sharp IF stages in the rx are about all that may be used. The signal arrives just as the desired one does, so there's not much to do if the ITV is right on the wanted freq. The only real cure is to turn off the offending TV. A last-ditch desperation move, that is strictly temporary, and ought to be used only very seldom (in the event of a Special that might be wiped out otherwise, is to get a VHF signal generator and couple it into an antenna and sweep it across the TV channels, getting the viewer to switch off in disgust. This is dangerous, as it can put interference in the aviation bands around 120 mhz, and the user is strictly on his own if he tries it. Do it more than twice, and you'll likely have the fuzz after you...that's what "temporary cure" means. Apartment dwellers could find themselves kicked out for repeated use of this tactic. But it likely WILL work once... Best thing to do is move to a big Farm in Ohio, I'd like that myself.

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Television Sweep Oscillator Harmonic Frequencies

1.	15.734 khz	56.	881.119	111.	1746.503	166.	2611.888	221.	3477.272
2.	31.469	57.	896.853	112.	1762.238	167.	2627.622	222.	3493.007
3.	47.203	58.	912.587	113.	1777.972	168.	2643.356	223.	3508.741
4.	62.937	59.	928.322	114.	1793.706	169.	2659.091	224.	3524.475
5.	78.671	60.	944.056	115.	1809.440	170.	2674.825	225.	3540.209
6.	94.406	61.	959.790	116.	1825.175	171.	2690.559	226.	3555.944
7.	110.140	62.	975.524	117.	1840.909	172.	2706.293	227.	3571.678
8.	125.874	63.	991.259	118.	1856.643	173.	2722.028	228.	3587.412
9.	141.608	64.	1006.993	119.	1872.377	174.	2737.762	229.	3603.146
10.	157.343	65.	1022.727	120.	1888.111	175.	2753.496	230.	3618.881
11.	173.077	66.	1038.461	121.	1903.846	176.	2769.230	231.	3634.615
12.	188.811	67.	1054.196	122.	1919.580	177.	2784.965	232.	3650.349
13.	204.545	68.	1069.930	123.	1935.314	178.	2800.699	233.	3666.084
14.	220.280	69.	1085.664	124.	1951.049	179.	2816.433	234.	3681.818
15.	236.014	70.	1101.398	125.	1966.783	180.	2832.168	235.	3697.552
16.	251.748	71.	1117.133	126.	1982.517	181.	2847.902	236.	3713.286
17.	267.482	72.	1132.867	127.	1998.252	182.	2863.636	237.	3729.021
18.	283.217	73.	1148.601	128.	2013.986	183.	2879.370	238.	3744.755
19.	298.951	74.	1164.336	129.	2029.720	184.	2895.105	239.	3760.489
20.	314.685	75.	1180.070	130.	2045.454	185.	2910.839	240.	3776.223
21.	330.420	76.	1195.804	131.	2061.186	186.	2926.573	241.	3791.958
22.	346.154	77.	1211.538	132.	2076.923	187.	2942.307	242.	3807.692
23.	361.888	78.	1227.273	133.	2092.657	188.	2958.042	243.	3823.426
24.	377.622	79.	1243.007	134.	2108.391	189.	2973.776	244.	3839.160
25.	393.357	80.	1258.741	135.	2124.126	190.	2989.510	245.	3854.895
26.	409.091	81.	1274.475	136.	2139.860	191.	3005.244	246.	3870.629
27.	424.825	82.	1290.210	137.	2155.594	192.	3020.979	247.	3886.363
28.	440.559	83.	1305.944	138.	2171.328	193.	3036.713	248.	3902.097
29.	456.294	84.	1321.678	139.	2187.063	194.	3052.447	249.	3917.832
30.	472.028	85.	1337.412	140.	2202.797	195.	3068.181	250.	3933.566
31.	487.762	86.	1353.147	141.	2218.531	196.	3083.916	251.	3949.300
32.	503.496	87.	1368.881	142.	2234.265	197.	3095.650	252.	3965.035
33.	519.231	88.	1384.615	143.	2250.000	198.	3115.384	253.	3980.769
34.	534.965	89.	1400.349	144.	2265.734	199.	3131.118	254.	3996.503
35.	550.699	90.	1416.084	145.	2281.468	200.	3146.853	255.	4012.237
36.	566.433	91.	1431.818	146.	2297.202	201.	3162.587	256.	4027.972
37.	582.168	92.	1447.552	147.	2312.937	202.	3178.321	257.	4043.706
38.	597.902	93.	1463.287	148.	2328.671	203.	3194.056	258.	4059.440
39.	613.636	94.	1479.021	149.	2344.405	204.	3209.790	259.	4075.174
40.	629.370	95.	1494.755	150.	2360.140	205.	3225.524	260.	4090.909
41.	645.105	96.	1510.489	151.	2375.874	206.	3241.258	261.	4106.643
42.	660.839	97.	1526.224	152.	2391.608	207.	3256.993	262.	4122.377
43.	676.573	98.	1541.958	153.	2407.342	208.	3272.726	263.	4138.111
44.	692.308	99.	1557.692	154.	2423.077	209.	3288.461	264.	4153.846
45.	708.042	100.	1573.426	155.	2438.811	210.	3304.195	265.	4169.580
46.	723.776	101.	1589.161	156.	2454.545	211.	3319.930	266.	4185.314
47.	739.510	102.	1604.895	157.	2470.279	212.	3335.664	267.	4201.048
48.	755.245	103.	1620.629	158.	2486.014	213.	3351.398	268.	4216.783
49.	770.979	104.	1636.363	159.	2501.748	214.	3367.132	269.	4232.517
50.	786.713	105.	1652.098	160.	2517.482	215.	3382.867	270.	4248.251
51.	802.447	106.	1667.832	161.	2533.217	216.	3398.601	271.	4263.986
52.	818.182	107.	1683.566	162.	2548.951	217.	3414.335	272.	4279.720
53.	833.916	108.	1699.301	163.	2564.685	218.	3430.070	273.	4295.454
54.	849.650	109.	1715.035	164.	2580.419	219.	3445.804	274.	4311.188
55.	865.385	110.	1730.769	165.	2596.154	220.	3461.538	275.	4326.923

This chart presented as a service for all DXers, to aid in identifying unID carriers, and for determining frequencies by using these as check points. This chart may be reproduced by any other DX club, providing NRC is credited. VALID ONLY IN THE UNITED STATES,AND CANADA (525 line N.T.S.C. Color television).

World Radio History

HOW TO SEND A RECEPTION REPORT

Given sufficient skill and patience on the part of the DX'er, very few US and Canadian stations will fail to verify reception reports. Many stations are reluctant to QSL, however, in part due to the large numbers of inadequate or incorrect reports received. Even worse for DX'er/station relations are the reports which demand rather than request verification. What goes into a good reception report on the broadcast band? A number of items should go into every report without fail. Give the date of reception and the frequency, and be certain to specify which time zone you are using in the report.

The most important part of the report - and the weak spot in most inadequate reports - is the listing of specific and verifiable program details. The object of a reception report is to supply the station with incontrovertible evidence that the particular reception did in fact occur; the station must be able to compare the details of programming supplied by the DX'er with the station log or their knowledge of their programming before a meaningful verification can be issued. No hard-and-fast rule can be given for how much program detail should be included, but generally speaking, the more the better. A word-for-word transcription of a one minute local advertisement would constitute excellent QSL material, whereas a listing of 20 pop song titles might be worthless, since stations rarely log song titles. US stations are required to enter the times of identifications, commercial spots, and public service announcements in the station log; such items make good verification material. Particular emphasis should be given to program details that are unique to the station in question: exact wording of station promos and local advertising, names of announcers, exact sign-on and sign-off formats, etc. Programming which can appear on several stations simultaneously, such as Network newscasts, may be useless as proof of reception, unless some local material is also included.

Describe the quality of reception in some detail with emphasis on interfering stations. Try to give an indication whether or not the station is frequently received in your location, or if the reception was a rare "freak". Mention other stations in the same locality that you might have heard, and compare the relative reception quality. Avoid using Shortwave reporting systems, such as SINFO codes, as they are unfamiliar at many MW stations. Give some details of your receiving equipment with emphasis on special items such as loop antennas.

One very objectionable and unethical practice in which a small segment of an otherwise honest DX community seems to indulge itself, is the practice of sending fraudulent reports to DX stations in an effort to obtain a verification of reception, or QSL card. Fortunately, many stations in the USA have on their staffs, at least one person, be it the verification signer, station engineer, or a technician, who is quite often a member of one of the major MW DX clubs, and frequently, when the unscrupulous "DX'er" sends a fraudulent or dud report, he usually gets caught when the report "bounces". Remember, it's up to you, the responsible DX'er, to prove to the station that you actually heard the DX you claim!

Having prepared an honest report, very politely request the station to check your report against their records and if it agrees, to send you a QSL card or letter to verify your reception of the station. Never demand - always ask politely! AND ALWAYS INCLUDE RETURN POSTAGE!

World Radio History

TAPE RECORDING FOR DX'ERS

Many DX'ers are using recording equipment in their pursuit of DX. Since the practice of sending tapes with reception reports seems to be increasing in popularity, a review of certain points and comments on several problems is in order.

HINTS: When sending a tape with your reception report, be certain it will be compatible with the playback equipment at the radio station. Make your tape at a speed of 7½ IPS ONLY! With very few exceptions, slower speeds cannot be played on studio or professional equipment. Remember, every station in the USA can play a tape at 7½ IPS; use this speed exclusively!

Another hint just as important, is to use only ONE TRACK on the tape. Unlike home tape recorders which are all two or four track, nearly all studio machines are one, or full track. In full track format, the entire width of the tape is used to record ONE audio track. If you send a tape with information recorded on more than one track, the studio machine will play back all tracks at the same time; the result is a garble of audio from which nothing can be understood. It is for this reason that the tape MUST be clear of all previous recording material before the DX recording is made. If you can't afford a bulk tape eraser, which does the best job of cleaning the tape, it's suggested that you keep a reel of virgin tape on hand exclusively for reporting purposes and record it in ONE DIRECTION ONLY. If you wish to reuse a tape upon which no significant DX is recorded, rewind the tape and record over the old material, starting at the front of the tape. DO NOT FLIP THE REEL OVER TO RECORD ON THE SECOND TRACK. If you record over the previous taping session, you will be sure that the old material is deleted and only one track will be sent to the radio station.

NEW PROBLEMS: The monophonic home recorder has just about disappeared, being replaced by the four-track stereo machine. Using a stereo recorder requires some additional techniques to make the tape compatible with studio recorders. Again, it is suggested you have a clean DX tape as described above. In addition, be sure the recording you make is on BOTH RIGHT AND LEFT CHANNELS. You will probably have to make or buy a "Y" patch cord so the audio from your receiver can be fed to both channels simultaneously. The reason is thus: The head configuration of a studio recorder plays back information from the entire width of the tape EXCEPT for the very outer edges of the tape. In the stereo head configuration, one of the tracks is placed near the edge of the tape. The result, if you record on just one channel, might seemingly be a blank tape when played at the station, or if

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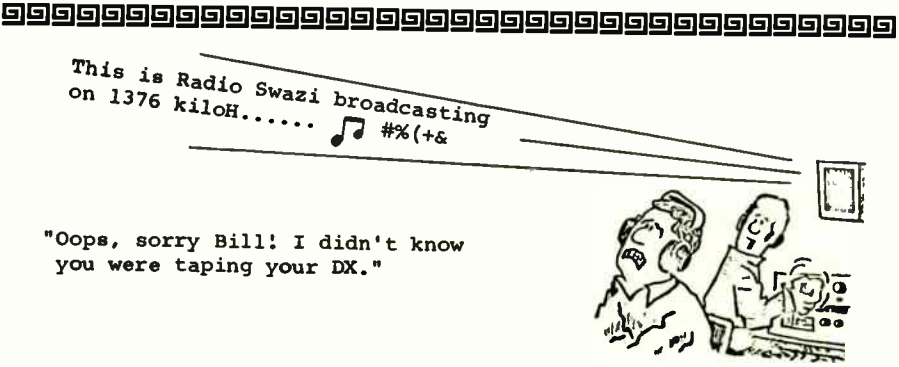
some audio can be heard, the level is so low that very little information can be extracted. By recording the same audio information on both right and left channels, you'll be sure that one of these tracks will play back at the station. Again remember, record in ONE DIRECTION ONLY on a clean tape.

HOW TO SEND IT: Tapes have been received at radio stations with as much as fifty cents postage on the envelope. If you are putting more than ten cents or so on your domestic taped reports, you are spending too much money. Use reels made by Robins Industries of Flushing, NY, which come sealed in plastic, packaged six to a bag. These reels have a diameter of two inches and will hold as much as three minutes of one-mil tape at 7½ IPS. In addition to this, these reels are light, sturdy and the inner hub diameter is equal to the more bulky three-inch standard reels. A tape, reporting form or letter, postage stamp and paper clip can be mailed in an envelope for the regular one ounce, first class rate. There is no need to place the tape in a box; just drop the tape reel into the envelope and mark the outside in big, red letters: "HAND STAMP" and "CONTENTS-TAPE RECORDING". As far as it is known, the Robins reels are the only ones available in a small diameter with the large hub. Don't let some oaf sell you a standard three-inch reel. To be sure, compare the hub sizes; the two inch reels sold by your local Radio Shack outlet won't work properly on studio machines due to high tape tensions. Check the Lafayette and Burstein-Appleby catalogs for availability of these two-inch, low torque reels.

Some DX'ers might be tempted to use thinner than one-mil tape in order to get more information on the reel; while this saves weight and postage costs, tape thinner than one-mil will snap or stretch on a studio machine. When mailing your tapes, place a piece of Scotch tape on the loose end and stick it to the side of the reel. Many tapes have been received at stations which uncoiled in the mails. What a mess!

THE FINAL WORDS: Don't send a tape unless you are sure the station personnel can understand it. Few people have "DX'ers ears" as you do. An ID way down in the mud which you can hear, may be unintelligible to someone unaccustomed to listening to jumbles of audio. Evaluate each tape carefully, and if in doubt, play the tape for someone who is not a DX'er. If this person cannot understand it, don't send the tape. In this case, a written report would be best. Good luck!



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DX TREASURES: RISKS AND PROTECTION

Are your "DX Treasures" safe? Many DX'ers neglect to protect their "DX Treasures" because they don't consider their value or vulnerability. However, any DX'er could be victimized by fire, burglary, or other damage. The results could be tragic, since it could be very costly to replace valuable equipment and even doubly tragic if valuable records were lost forever.

Logbooks, verifications and/or tapes are the fruits of years of dedicated DX'ing and may have priceless personal value. Unlike equipment or stamp collections, many verifications and tapes are unique items in themselves which can't be replaced at any price, especially by the veteran DX'er listening some 20 or more years ago.

Most serious DX'ers would be very distressed if their treasures were lost. This risk should not be ignored because disasters have happened, such as:

* the fire at NRC headquarters;
* the two-time equipment burglary of a Florida DX'er;
* one DX'ers son inadvertantly put some verifications in the trashcan;
* some radio stations were decimated by hurricanes or earthquakes.

There is no specific "best way" to cope with such risks because everyone's circumstances are different. However, this article will provide some general guidelines on what the concerned DX'er can do to achieve "peace of mind". Each DX'er can use these ideas to work out his own individual solution.

PROTECTION:

It costs money to reduce risks and protect "DX Treasures"; however, the DX'er who can afford the price of NRC dues should also be able to afford a modest amount of protection for his valuables. If you are concerned, you should think about the following:

* personal value of DX records, tapes, veries, logbooks, etc;
* replacement cost of equipment;
* extent of protection you would like;
* money you are willing to spend on protection.

Once the DX'er has these facts out in the open, he can do something specific to secure his valuables. The DX'er must use his own judgement to determine what action and costs are appropiate. Basic tactics should involve such measures as offsite storage of copies of valued records, tapes and veries, plus the added protection of equipment insurance. Here are the details.

OFFSITE STORAGE OF CRITICAL RECORDS:

DX'ers accumulate valuable records such as logbooks, verifications, and tape recordings. Personal papers with no commercial value may actually be more valuable to the DX'er (especially a veteran) than

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his receiving equipment, since if lost, many of these records could not be replaced even with insurance proceeds. Many "one-time" loggings can not be repeated, and it would be difficult to obtain replacements for all one's QSLs - especially old, or foreign ones.

Rather, the DX'er should make duplicate copies of his records; tapes can also be duplicated. Verifications can be photostated or microfilmed. All these copies should be stored in a safe place. In the business world, most companies have elaborate systems of backup records for their computer data. These are listed below.

DUPLICATION:

Duplicate tapes cost very little and the DX'er with a second tape recorder can prepare them easily. This is straightforward and need not be discussed further.

It is a different story to copy verifications. Unless you have free access to the right equipment, you'll have to pay someone to copy the verifications for you. Photocopies are relatively cheap and in the right circumstances, so is microfilm. Reasonable people would accept such copies as replacements or substitutes for the original.

XEROX COPIES usually cost between 10¢ and 25¢ each, depending upon how many you buy. There are various places where these can be obtained; see "Xerox copying" in the Yellow Pages of your phone book. The prudent DX'er can obtain copies of his logbook, QSLs, etc. for a cost of $10 to $50, depending on the amount of material to be copied and the cost per page. Of course, it's up to the individual DX'er to decide how much "peace of mind" he wants and where to draw the line on costs.

MICROFILM COPIES are an alternative technique. If you want to copy large quantities of QSLs, it's cheaper - roughly 1½¢ to 3¢ a document and the storage problem is not significant in terms of space. However, it is more cumbersome to look at microfilm records than Xerox copies, since the DX'er must rent, borrow or buy a viwer to do such. In terms of cost, microfilm was found convenient because, for about $50, the author of this article could microfilm all 1,414 of his BCB QSLs, as well as personal papers and a stack of "ham" QSL cards on a single roll of microfilm which can be stored in a safety deposit box. However, based on the author's earlier experience, the DX'er may have difficulty locating the right kind of microfilm service. Several companies were listed in the telephone book under "Microfilming Service", but most were geared to architects and therefore would only microfilm large blueprints at 30¢ apiece.

If a sympathetic firm can't be located in your area, you might consider the service offered by one of NRC's members, who is employed by a microfilm concern and who, as a DX'er, is acquainted with the requirements of the situation. If you desire personalized service, it is suggested that you contact: WAYNE HEINEN, 126 Linwood Avenue, Orchard Park, New York 14127. Wayne will supply complete details.

STORAGE:

Once you have duplicate records, you should store them in a safe place, remote from your "DX den". Although storage might cost money,

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you should be able to get it free. Such free safe places include:

* the custody of a trusted friend or relative;
* a desk at the office or a locker at school;
* a reciprocal storage arrangement with another DX'er.

An alternative is to rent a safe deposit box in a bank vault or to investigate storage costs in a public warehouse; however, owing to the fact that tapes and microfilm tend to deteriorate in climates of extreme temperature changes and/or humidity, a sound precaution is to store such articles in an air-conditioned site.

EQUIPMENT INSURANCE:

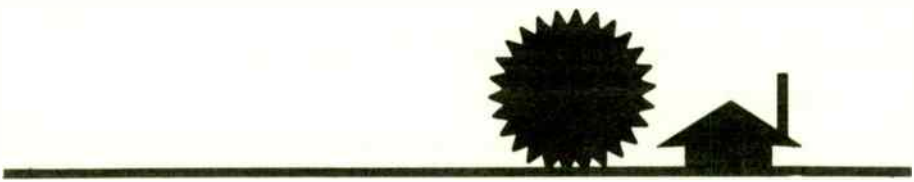
The DX'ers equipment may or may not be more valuable than his records. In the author's case, replacement of radio gear could be achieved for less than $200, which is less than what the QSLs are worth. Other DX'ers have elaborate equipment and their situations are quite different. The DX'er must determine whether his equipment is really worth insuring, or if it is already covered by existing insurance, which is of the homeowner or tenant variety. Most adults have coverage for personal property. Depending on the fine print in the policy, the DX equipment may or may not be covered. If it isn't, you can extend your coverage to specifically include it.

Many younger DX'ers may not have insurance coverage. If living at home, their personal possessions may not be covered by their parents' insurance. As was the case with the author, he had to pay $15 a year for a small, special policy to cover his camera,stereo and DX gear. If you want to consider such insurance coverage, contact some casualty insurance agents and see what type of coverage can be had. Parents, friends, business associates, or bankers may be able to refer you to a reliable agent.

The going rate for young bachelors living at home or in an apartment is $15 to $25 a year for standard coverage of loss, theft, damage up to $4,000 of personal property. If you get such a policy, you may be able to get additional coverage on a special "Personal Articles Floater". These give extended coverage for special collections, such as jewelry, stamps and quite possibly, verifications at only a cost of a few extra dollars.

The author of this article doubts if any sum of money really could replace destroyed or stolen tapes and QSLs. Equipment can be replaced given enough time and money. It is up to the DX'er to decide if insurance coverage for his equipment is worth the price after shopping around for the best deal.

For tapes, DX records and verifications - reliance, it is felt, should be placed on duplicate, offsite copies. Remember, a disaster could happen at your DX shack!



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WHAT IS A FREQUENCY CHECK?

Page Taylor

Frequency checks have been confused and mistaken for equipment tests and even heterodynes from adjacent-frequency foreign stations. How can we distinguish between a real FC and something that isn't?

Although it is no longer required by FCC regulations for AM stations to monitor their frequencies through a monthly measurement, many still do so, and the format of the frequency check may be as varied as regular-schedule formats. Most often, however, you will tune to a frequency and hear a steady 500 or 1000-cycle tone, interrupted by an ID either in voice or code (if you're extremely lucky, hi!). The normal duration of a frequency check is fifteen minutes -- if you're tuned to a tone for a period significantly longer than fifteen minutes, chances are, you're hearing an equipment test. Some stations, particularly those in the southeastern part of the United States, test with a telephone dial tone, pitched considerably lower than the usual tone. Several stations still ID in morse code, helping the monitoring company and the DX'er ID the station on a crowded frequency.

Several years ago, it was considerably easier to pick out an ID on a frequency check -- unfortunately, this is no longer the case. The usual period of station identification is right at the beginning of the test, and at the conclusion. A few stations still break in the middle of the test period for ID, but these are few in number, and seem to be decreasing rapidly. It is wise to consult the Inter-Club Frequency Check List for the period during which you intend to listen, and tune to the frequency of the desired station several minutes before the test is due to begin, in the hopes that you will catch the station coming on with an ID.

On the other hand, you'll hear pretty nearly everything and anything imaginable on an equipment test: music of all kinds, from classical to hard rock (some lovely stations play an entire side of an LP album, then flip to the other side and play it as well, all without one single ID!); endless open carriers (vis a vis WBZ/KDKA on a Monday morning); tones of various pitches ("London blitzkrieg" tones); station promos ("WDEN is everywhere"); fun and frolics at the transmitter site ("Hi, all you kiddies out in radio-land! Can you hear me? Ha, ha, ha"). As we can see, some of these practises are outlandish at best to illegal at worst, but these are the things that can be heard on pretty nearly any MM "experimental period" time slot. The duration of an ET can be anything from a few minutes ("Good morning! WKER Pompton Lakes testing. Good night!") to all morning long ("WKBA Vinton...we'll be here with you for the next four hours while we adjust our transmitter, so why not stay with us awhile...").

DX'ers on the east coast have a problem DX'ing frequency checks which is not only confusing and time-wasting, but annoying. Frequencies such as 1440 and 1240 which have checks listed for a certain time will almost always yield the proper 1000-cycle tone (during winter months), but not necessarily because the desired station has showed up. If the tone refuses to break after fifteen minutes of monitoring, and is still present an hour or so later, chances are you've got nothing more than a heterodyne from Radio Luxembourg on 1439 or France on 1241!

As for the art of verifying frequency checks, it is imperative that all times of tone-on and tone-off be given, plus exact wording of station IDs if possible. If no IDs are heard, it is not advisable to request verification from a "suspected" catch, as there is no verifiable information. Such tenuous loggins of tones could have been any one of a myriad of stations testing, particularly if on a graveyard channel. For further detailled information, see the Frequency Check List, available in NRC Reprint #L2 (64¢ pp to Members, 80¢ to non-members from NRC HQ).

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It Takes Two to Verify

By Jay Murley

Some of our younger DX'ers seem especially incensed when a station doesn't confirm a reception report - any reception report. They'd like to complain to the F.C.C., but grudgingly admit that the Commission's Rules don't cover QSL's. So we read a lot about stations that don't verify, and the pros and cons of blacklisting the nonverifiers. But how often do DX'ers look at the other side of the exchange - from the station's viewpoint?

Stations are often divided into two separate camps: the verifiers and the nonverifiers. 'Taint so. There are the automatic verifiers, priding themselves on the number of "reports" received. Then one finds the solid verifiers who acknowledge correct reports with sufficient data. And one finds the sometimes-maybe broadcasters, who verie whatever reports are handy when the mood strikes them. The distant verifiers are a separate breed, as they throw away a top-notch report from the state next door, while confirming an illegible card from lower Slobbovia. At the other end of the spectrum one finds the non-verifiers and virtual non-verifiers that account for so many complaints. But before you donsider making up a permanent list of the "nays", consider two thoughts. First, that stations consist of people just as capable of changing their minds as the rest of you. And second, that the people themselves are subject to change..... rapid change, in a business as volatile as broadcasting.

Among the changes particularly afecting the DX hobby is the decrease in stations and personnel that do verify. As one of the few members who have signed more veries than they've requested, I'd like to offer one explanation. The trend really accelerated in 1966, as management saw sluggish projections for 1967 profits due to rising costs and creeping revenues. They asked their department heads to offer cost reduction plans and methods of reducing workhours. And smaller stations or those without adequate budgetary forecasting fillowed the cost-cutting path, too, as profit increases didn't materialize several months later. QSL cards and the time to process them were among the expendables, as they produce neither loyal, local, measurable listenership or new sales volume. And whether promoted from sales, or perhaps, programming, (or occasionally from engineering), station management is sales and profit oriented. As mail maps ceased to be a sales tool for most stations, DX'ing lost its value to most broadcast executives.

But stations continue to verify. And occasionally broadcasting execs not involved in the hobby still discuss distant reception reports. What do they look for?

The solid verifiers who check their logs, if only from memory, want adequate detail that can be checked. A list of musical selections doesn't do the engineer or management executive much good: he can spot titles that don't belong on his playlist, but few reports to KKHI mention "Cream" and the "Jefferson Airplane" and fewer yet arrive at WRKO with mentions of "Bach" and "Brahms". No, a station doesn't like to verify on the strength of "rock and roll music", "M.O.R. instrumentals and vocals", or mentions of a Sinatra cut that could have been on anyone's playlist. They want definite data, with exact times, of the sort that will apply only to them and be recorded on the station's permanent log.

Perhaps your reception wasn't "armchair copy" - the really tough DX rarely is for those of us living in metro areas using our usually barely adequate equipment. But a reasonably clear sponsor identification, the wording and exact time of a station break, the start or end of a separate program, and the like can be copied with some accuracy. And these features do appear on logs.

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Similarly, most stations have formatted their news introductions and similiar programming features. Everyone tries to be reasonably distinctive, at least for his market, and more important, every station staffer tends to be aware of the wording of these set program materials. If you copied the intro to WPTF's Farm Show, for example, include it in your reception report. Because Chief Engineer Henry Hurlich isn't particularly anxious to verie a report reading "Farm Show with Wally Ausley"; he'd like to see some identification that the reporter didn't do his monitoring in the Raleigh pages of Standard Rate and Data or Broadcasting Yearbook!

When it comes to indicating that a commercial was broadcast, even in a language you barely understand, try to time it. Logs may not show commercial continuity but they do show approximate lengths. If you're listening to a foreign language station and can't tell when the commercial ended, you might time the length of the jingle if there was one.

Station sign-on and sign-off can be useful in reporting, especially if a station is a few minutes off its published schedule on the day in question.

Not all stations check all reports equally carefully. A veteran exec at a Texan clear-channel station admits that they verify the New Zealand reports automatically, recalling that he had never seen a poor one! The same station tends to verify even the most incomplete reports, as WBAP tends to be among the first stations reported by most newcomers to the hobby. But they feel that even the newest novice can include date, times (and times in the station's time zone, not necessarily yours), and a description of the program content.

Other stations don't start checking until they get a fraudulent report. I was too "easy" in Phoenix... until I received what was obviously a fraudulent report from England. He had assumed Arizona time checks to be on daylight time and us to be on the air. Not only was he wrong on both counts, but his program description missed by a country mile - he had us broadcasting in the wrong language!

And others continue to circular file all reports. A New Jersey member followed up a Manchester, New Hampshire station five times in an effort to get a verie; now that the manager has received a report from Alaska, he's become interested enough to check it against his log. But his attitude remains, "It's a pain in the neck. It doesn't mean anything, except if they send a loose stamp you're a nickle richer... I ran out of QSL's and didn't reorder. Hell, I'm struggling for existance, worrying about my accounts receivable." From an ex-ham, that's a surprising attitude, but the PPC has merit in dealing with such stations as WFEA.

Many such attitudes can be found at daytime stations, historically under-staffed and underbudgeted. Some are curious, however, how their new pre-sunrise authorization (PSA) limited power signals are getting out. Though such a station couldn't care less about a sunset skip report when they're operating with full power, sunrise skip of their reduced power operation, especially during the crucial winter months, can produce useful reports. For as their full-time competitor downgrades the daytimer's P.S.A. coverage in morning/commute hours, a stack of letters detailing reception under limited power is useful to their local sales force. A growing number of non-verifying daytimers present new possibilities for successful confirmations. For the relatively nearby DX'er, this may be the only way to get reprots from daytimers that ignore reports from listeners located within a several hundred mile radius.

Even the clear-channel operator can benefit from proper DX reports. While WNBC engineering personnel handle verifications, General Manager Lee Hanson takes an active interest in reports from DX'ers to the south and west that

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outline interference problems due to their 660 kHz counterpart in Mexico City. In such cases, where treaty negotiations have been a management concern for several years, tapes are especially appreciated. As higher power allocations materialize due to the new treaty with Mexico, a number of stations will be watchful for new interference patterns on both their own and adjacent channels.

If you're located in the normal fringe area of a station's signal pattern, details of normal interfernce pattern problems are one of the best ways to make your report useful (and therefore more likely to be verified). Even with the clear-channels, a listener living on the edge of the null of their new co-channel counterparts can provide useful data.

So make your report as complete as possible, but keep it to a page. And if you can't, don't, or won't type: print very legibly. Remember to put your name and address on the report as well as the envelope, for envelopes get lost very easily at stations.

And one last note of caution: don't get nasty to the station on your follow-ups. Remember that the DX'er is a hobbyist imposing on the harried executive or technician and is asking a favor that the station is under no obligation to deliver. If you try to place yourself in the position of the station as you write your report instead of thinking strictly in terms of the DX'ing hobby, you'll find yourself writing more significant reception reports - and you r percentage of returns will probably rise considerably!

-30-

Why some stations eventually ignore all reception reports:

Dear Sir with a QSL card
Please verify that I heard you at 12:10 PM EST on January 11, 1969. At that time the local news was on. You are a NBC affiliate and you are located at 1370 kc.
Thank You
WBZ
1-17-69 (2-1-24-69)

Dear Sirs,
Please confirm my reception of WSPD.

FREQUENCY- 1370 kc.
TIME- 7:00 P.M. E.D.T.
DATE- 7-10-67
SIGNAL-good
WHAT I HEARD- end of fishing report
Thank you very much.

Sincerely,

WSPD
8-21-67

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UNDERSTANDING STATION PROCEDURES AS A KEY TO WRITING BETTER RECEPTION REPORTS

- Jerry Starr NRC
W H O T RADIO

Despite the occasional guidelines to reception reporting published in the DX press over the years, many stations are still receiving reports of marginal quality, usually lacking in proof of reception that can be checked for accuracy by the station. Many of the reports received here at WHOT, for example, consist of record titles and/or such unverifiable entries as "music" or "announcer gave time as 2:30" or the even more hazy "announcement". Needless to say, most all stations have music, time, announcements and so forth. Happily, most experienced DXers with a few years at the dials understand what constitutes a verifiable item. This article is aimed primarily at the novice DXer who might send such reports through no fault of his own, nobody ever told him differently.

The key to supplying verifiable details is understanding station procedures and the program log, the "roadmap" by which the station keeps a record of every minute of the broadcast day. Most items entered on this log are good verifiable items. If there is any doubt about the reception, the verie signer has only to check that day's log to confirm the items heard.

Let's take the most commonly reported reception details one at a time and see how they do or do not fit into the records maintained by the station.

MUSIC: For some reason most DXers are, or were at one time, under the impression that stations keep a list of the titles of the music they play. With VERY FEW exceptions this is not done. Even if the TYPE of music may indicate to a station that they have been heard, chances are other stations on the frequency are playing the same type of music. A report with a long list of record titles is useless to the verification process. EXCEPTIONS: If a record played is referred to as being, for example, number 23 or such on the station's popularity list, this can be checked. Classical music stations usually maintain an exact schedule of the selections they air. On equipment tests using music you should include titles. Many times the engineer performing the test will pick out a record or album he particularly likes and would probably remember the songs. Also, some stations have one particular record or album they use for testing. Most of us have heard, for example, WORV's or WPJD's test album of organ music or the handful of stations that seem to always use the same Dixieland album. One other exception is, of course, DX tests. Those titles should always be reported.

NEWS: In the interest of writing a complete report, any newscasts heard should be reported but not relied on as a sole basis for verification, particularly NETWORK news which could be run at the same time on any number of stations on the same frequency. Just reporting "News" is not verifiable. Likewise, commercials in network news mean nothing. EXCEPTIONS: LOCAL news items are good reporting material while NATIONAL items, even on a locally-originated newscast are not. There are only two major newswire services, AP and UPI,

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and their national items will usually be read with the same wording on every station using the service. LOCAL news names, locations and events are worth including in your report. A special "catch phrase" referring to the station's newscast is a good item to include if it's identifiable as something unique to a particular station, such as "Radio Thirteen Total Information News", or "Fanorktown News Scope".

WEATHER: Everybody seems to include the weather information they hear in their report which, while it contributes to the completeness of a report, should not be relied upon as an item on which verification can be based. Stations don't keep a record of their weather forecasts or temperatures, and it's not likely anybody would remember what the forecast was on such-and-such a day. EXCEPTION: Very unusual weather conditions, a locally heavy storm or damaging wind, or an unseasonably cold or warm temperature MIGHT be remembered by the reader of your report.

COMMERCIALS: These are by far the best proof of reception to offer in a report since all commercials must be entered in the station program log along with an indication of the time the commercial was aired. Give as much information about the commercial as possible, sponsor's name, address, phone number, etc. A report with some good concrete commercial information can always be checked for accuracy. EXCEPTION: As stated before, NETWORK-ORIGINATED commercials offer no proof of reception. Although these are also entered on the station log, they could have just as easily been heard on another station with the same network. There are times, however, when a station will insert a LOCALLY-ORIGINATED commercial into a network program, so be watching for them. The Mutual Network, for example, has a one minute "hole" in their hourly newscasts, where the station may delete a Mutual public service announcement and insert a local announcement or commercial.

PUBLIC SERVICE ANNOUNCEMENTS: Like commercials, these PSA's are entered in the station log. They may be pre-recorded PSA's such as Savings Bonds or Christmas Seals, or local items like the Kowolski Junction Annual Boxlunch and Linseed Festival. These should always be included in your report.

EQUIPMENT TESTS AND FREQUENCY CHECKS: This is one exception in that no program log is kept. However, all tests must be entered on the station TRANSMITTER and MAINTENANCE logs. With the exception of frequency checks, identification announcements aren't made at any exact predetermined time. What IS logged is the time the transmitter is turned on and off and a notation of what type of testing was done. It should be evident that an engineer will remember any after-hours testing he has performed by the time your report reaches him. If it was an UNSCHEDULED test, just the fact that you knew the station was on the air testing offers good proof of reception. You should also note the type of modulation used, be it continuous tone, tone of varying frequency, unmodulated carrier or music. For regularly scheduled frequency checks, try to give word-for-word copy of the announcements you heard and the exact times. Most stations with widely-heard FC's can spot a fake report a mile away and, even if your report is authentic (as we hope it is), a report that consists of "Heard tone and announcements from 1:00 to 1:15 is viewed with

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skepticism. You may have heard the station, but you havn't proved it. I have found that the greatest tool in reporting FC's is the tape recorder. Sending a tape of several identification announcements offers more proof of your reception and has more curiosity value at the station. A tape sets your report apart from the others and many times will elicit a reply where a written report would not.

Here's a good example of why you should report announcements word-for-word during tests. A station whose call I won't mention uses "key" phrases in its announcements. The engineer who conducts these tests, which are widely heard, will use the word "kilocycles" one month and "kiloHertz" the next. He is quite familiar with DXing and can spot a bogus report right away. He won't verify unless the DXer has included the correct catch phrase in his report. Another station, again nameless, has an engineer who makes a game out of the words he uses in giving the call letters phonetically. For example, if the call were WHYG (which it isn't) he might say "Well How's Your Grok" one time, and William Harry Yolanda George" another month. Again, he won't verify unless the details match..

SYNDICATED PROGRAMS: These are the half-hour Bible-thumpers and record pushers you hear on Sunday night or morning, although many stations air them during the week. When you report, be sure you know the exact name of the program. Many times it's given only at the beginning and end of the program. The speaker's name is good to mention, as is a mailing address.

One thing I hate to bring up since a very small (and I stress SMALL) segment of the DX community is at fault, is sending a report to a station for which nationwide program schedules are available without actually hearing the station. These DXers (if you can call them that) DX out of a book rather than with a receiver. Fortunately they usually get caught. Not long ago a DXer (?) reported hearing a station in the southwest carrying a syndicated program at the time listed in a published schedule. Only problem: the program's contract had expired and when it was renewed the time period was changed. The report was an obvious dud, and the station's verie signer wrote back, in no uncertain terms, what he thought of such practices. This kind of sham casts a shadow on all DXers in general and is all the more reason to provide plenty of positive information in your reports.

CONCLUSION: IT IS UP TO YOU, THE DX-ER, TO <u>PROVE</u> TO THE STATION THAT YOU ACTUALLY HEARD IT. THE BURDEN OF PROOF IS ON YOUR SHOULDERS.

There are probably some items I've failed to cover. If you have any questions about station operation as it pertains to DXing, feel free to write. If there are some interesting questions raised, a follow-up article to this one will appear in DX NEWS.

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RECEPTION REPORTS REVISITED

-Jerry Starr WHOT Radio

A number of letters have crossed my desk in response to the recent Reception Reporting article, and I thank all of you for your kind remarks. However, many members have expressed the opinion that the problem is probably not as widespread as I indicated; that reports of poor quality don't happen very often. Well, folk, I hate to break your balloon but they seem to be showing up all the time. In fact, less than half the reports that reach me here at WHOT are really verifiable. Let me say right now that only one of these was from a DXer who was a member of NRC or IRCA.

The last article concerned itself with how to write a report with meaningful information. This time, let's talk about how NOT to write a report. For illustration we'll look at the above mentioned reports all of which have been received here within the last three months. Names, of course, are omitted, but otherwise these are the complete details provided. Ask yourself if you would verify these reports if you were the verie signer.

1...."I would appreciate verification of my reception of WHOT at 0130 EST on (date). Your weather spot at that time gave the local temperature as 44. This weather report was preceded and followed by rock music."
(Note: handwritten, and almost unreadable)

2...."Station: WHOT, Time: 3:14 PM, Band: 1330 kHz, RST: 59, Mode: AM. Pse QSL. I will not accept your QSL until you put the DATE and TIME on it."
(Note: This report was on a postcard from Minneapolis. One wonders if this reception was possible in the middle of the afternoon with WLOL in Minneapolis also operating on 1330. Hmmmmm.)

3...."Could you please send me a verification of WHOT 1330 Campbell, Ohio. This is what I heard, 2:56 News, 3:00 weather report, 3:01 Music, 3:11 weather report. WHOT is coming in very weak."
(Note: This on yellow tablet paper, no date given.)

4...."I have picked up both stations, WHOT and WRED-FM at 10-12N and 6-9 PM while in Warren, Ohio. I liked the stations WHOT and WRED best. Please send QSL cards for both stations."
(Note: This one was scrawled in very light pencil on tablet paper, gave no date. Warren, Ohio, by the way, is a suburb of Youngstown about ten miles from our transmitter. Real DX, huh?)

5...."WHOT campell ohio 1330 9:30 est. signal strength fair. my receiver is a star roamer I use a long wire antenna. 9:36 song, 9:38 weather report, 9:39 song Partrige family, 9:43 commercial, 9:44 song stay with me, 9:48 song, 9:52 song. If my report checks out with your station log will you please send me a QSL card."
(Note: Handwritten on notebook paper, one-half of a sheet ripped rather than cut in half.)

All but one of these reports did not contain return postage. The one that did had the stamp half-glued to the page.

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As I said before, of ten reports received here in the past three months, five of them were like these. Is it any wonder many stations have less than a favorabl opinion of the DX hobby? While WE realise these reports are mostly from novice DXers who do not belong to any club, the STATION doesn't know this and tends to lump all DXers into the same category, all the more reason to make all of your reports both neat and informative.

One other observation, for what it's worth, four of these reporters had WPE or WDX calls. It might be that the widely read electronic and hobby magazines are only touching the surface in their DX-oriented articles without any in-depth information on the real fundamentals of the hobby. I can't recall ever having seen a good article on how to write reports in any of the mass electronics publications. If you are a reader or subscriber to one of these magazines, a letter to suggest such an article might be a good idea. If enough NRC and IRCA members wrote in such a request, we might get some action.

In the 12/18/71 DX NEWS, at the conclusion of my Reception Report article, I requested questions and/or comments. A number of letters has been received with some very good questions, so without further ado:

Q: You said stations don't keep a list of records they play, but I visited WHOT in 1970 and noticed that you DO keep a list of all the records you play. Don't other stations too?

A: Yes, some stations do keep such a list. Here at WHOT we write down, on a form, the records we'll play each hour, but this is done just to simplify the programming. When the DJ selects his records ahead of time, he doesn't have to worry about what he's going to play next and if it fits into the format while he's on the air. This type of pre-planning is quite common, especially in Top 40 formats. However, at the end of the day, these lists are placed in the circular file. I don't know of any station that keeps or files their daily programming lists. There may be a few, but they're rare.

Q: I was at a station and saw them write down the temperature on the transmitter log. Why do you say temperatures are not recorded?

A: As above, this is the practice of some stations, but not many. The stations that do, do it for this reason. Some directional antenna systems, especially the more complex, tend to "drift" during unusual weather conditions. Very heavy rain, snow or ice, or a sudden severe change in temperature may cause the base currents and phase angles which determine the pattern shape to vary slightly causing some pattern distortion. If this occurs, it will naturally show up in the readings made in the transmitter log. Since an explanation of such out-of-tolerance readings is in order, an entry is made describing the cause which may include the temperature. All DA stations are also required to make periodic field strength measurements. An engineer will take a field intensity meter to predetermined "monitor points" around the radius of the primary coverage area to determine if the DA is operating within tolerance. These points are always in the same locations, usually placed in the centers of the pattern nulls. By measuring the actual field in these nulls and comparing the measurements with prescribed measurement values, the station can

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determine if the DA pattern shape is what it should be. As mentioned before, weather and seasonal changes may alter field intensity so a notation is made of weather conditions or temperature when the measurement is made. It is still doubtful that weather or temperature in a report would constitute a good verifiable item.

Q: You have a lot of nerve trying to tell me how to write my own reception reports. Who do you think you are, God?

A: No.

Q: A local station records the hourly Mutual network news and plays it back at 15 minutes after the hour. Wouldn't this be a good verifiable item?

A: Yes. If you hear a network newscast at an odd time, this is an exception to what I said about network newscasts. Reporting a network newscast at a time other than normal certainly would indicate you were hearing the station. Caution: Be sure you are familiar with the normal network procedures and times. ABC, for instance, runs newscasts at different times depending on what service the station carries, Information, Entertainment or Contemporary. Every station with an ABC network line receives all the newscasts on the same line but picks up only the one for which it holds a contract.

Q: How would you report a station operating off frequency, or a daytimer on later than allowed?

A: Very carefully. Many station engineers have never heard of DXing or don't know how technically advanced a DXer's equipment might be. If you call or write a station to tell them they're off frequency, you'll probably be treated like some kind of crackpot. Even if a station knows, or finds out from your information, that they were off frequency or on after-hours, it is doubtful they would verify such a fact. If you hear a station off freq or after hours and tell them so, you've done your good deed for the day, but don't wait for a verie. I've only scored two of these since 1954, and probably if I hadn't called the station, and been in the business, and found an understanding engineer, I probably wouldn't have these two.

Q: What is the worst report you have ever received?

A: One that just said "I heard your station today, please verify my reception." That's all! What's worse, this report came from an NRC member who had been DXing for years.

Q: Aren't stations required by law to answer letters about their signal strength?

A: No, no and no. Where did you ever hear that? Hi!

Q: Did you ever send what you would call a bad report?

A: To be honest, yes. I would probably be embarrassed to death if anybody saw any of my early reports. I think most of us started that way. Unfortunately, a few of us never improve.

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Q: How long a period of time should a good report cover?

A: Three people asked this one. The longer the better, up to a certain point of course. There is no hard-and-fast rule on this. Ask yourself the question "Would I verify this?" A half hour's worth of report is useless if it contains just record titles or such. Five minutes' worth with several commercials is more verifiable than that. The old rule of quality rather than quantity prevails.

Thanks to all who sent in these questions. Hope this has provided some of the answers. 73 and Good DX!

I JUST CAN'T TAKE ANY MORE OF THAT RACKET-- I'M GOING TO A MOVIE!
I'M GOING WITH YOU-- WE BUY A NEW RADIO AND ALL WE EVER GET OUT OF IT EVERY NIGHT IS A LOT OF SCREECHING AND SQUAWKING!
WELL, IF YOU TWO WANT MUSIC, WHY DON'T YOU GO TURN ON THE PHONOGRAPH? THIS BABY'S LOADED WITH POWER AND WE'RE TRYIN' TO SEE HOW MANY MORE NEW STATIONS WE CAN PULL IN!
YEAH, AN' WE'VE ALREADY GOT TWO MORE THAN WE HAD LAST NIGHT! LISTEN--I THINK I HEARD A VOICE THERE, PA!
WHEEOOOO--
BLAWWW
BEEP
HMMMM
NEG COCHRAN
BORN THIRTY YEARS TOO SOON
4-18

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YOUR FIRST 12 MEXICANS

This isn't a problem in the southwest. But many DX'ers far from the Mexican border have definite loggings on only a handful of Mexicans. And those who do not understand Spanish may feel rather frustrated in their attempts to raise their totals.

But there happen to be a few rather foolproof shortcuts that require only careful listening. The only requirement is an extra receiver, standing by on your most audible Mexican frequency or on certain short wave dial positions in some cases.

With rare exceptions, for instance, every Mexican station-regardless of time zone-carries the same program from 2300-0000 Eastern time on Sunday evenings. Even if you don't understand the language, the well produced "La Hora Nacional del Gobierno Mexico" offers unexcelled opportunities for parallels. This is a prime source of new loggings for both distant DX'ers and border area DX'ers logging the tougher locals by careful looping.

Five of the most commonly heard AM's have SW parallels as well. I suspect that these may present the sort of problems us in the West encounter as we attempt to log Nova Scotia via SW//AM. But for those whose loggings of certain large power XE's have been blocked only by the splatter of a pesky local, this approach may have merit.

Most distant DX'ers will find their first ten Mexicans to emerge from the thirteen stations below. Some are primarily English language, some largely so; the majority are Spanish only.

40 XEWA San Luis Potosi, S.L.P. 150 kw
Spanish only, // 900, 1190, 6165, 9515. ID's as "La Voz de America Latina". Dominates 540 in much of the country before s/off.

690 XETRA Tijuana, B.C. 50 kw
Needs no introduction to Southern California DX'ers as they use a N-S figure eight antenna pattern. Tough in the east with QRM from the Canadians and the Cuban R. Enciclopedia.

730 XEX Mexico City, D.F. 150 kw
Spanish // to 6065, not tough if you aren't right on top of the Canada QRM.

800 XEROK Ciudad Juarez, Chihuahua 150 kw
ID's as X-Rock and can be heard anywhere in the U.S.-has even been logged in suburbs of Detroit under CKLW! US rock&roll.

900 XEW Mexico City, D.F. 250 kw
Spanish // 540, 1190, SW. Once again, easy if you don't have tremendous interference from the Canadians.

1000 XEOY Mexico City, D.F. 10 kw
Runs all night, // 6010. Generally easy with WCFL off on Monday mornings, ID's as Radio Mil after every record. Common even during the week with a good loop.

1030 XEQR Mexico City, D.F. 30 kw
Another fairly easy all-nighter. Dominates 1030 with WBZ off on Monday mornings and out of the Northeast it can be heard any night of the week. Frequent ID's and a whistled theme (IS).

RADIODIFUSORAS
CALLE GUERRERO 747 OTE.
APARTADO No. 134

XEOR

EL GALLO, S. A.
TELEFONO 2-01-90
C. REYNOSA, TAM.

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1050 XEG Monterrey, N.L. 150 kw
An all-nighter. Much English religious programming and gives an address in Saint Louis for letters. Easy if you aren't reading this in New York or Toronto, hi.

1090 XEPRS Tijuana, B.C. 50 kw
On the air 24 hours a day and directional up into California. A harder catch back east but still not really exotic.

1110 XERED Mexico City, D.F. 50 kw
For many, best logged via "La Hora" //'s or on Sunday morning between WBT's sign-off and XERED's s/off. ID's as X-E-Red. Not as common as the others listed.

1190 XEWK Guadalajara, Jal. 50 kw
Again, not as easy as the others. Help in the form of //'s to 540, 900, and SW.

1220 XEB Mexico City, D.F. 100 kw
Another of Mexico's clear channel biggies. ID's as Radio Cuatro with an occasional "La B" thrown in. Dominates the frequency away from the northern US and Canadian stations.

1570 XERF Ciudad Acuna, Coahuila 250 kw
The easiest Mexican? Signs on at local sunset and until sign-off at local sunrise they cover most of the US. Look for both EE and SS programs of a religious nature.

As a challenge to those who have long ago logged the above stations, be informed that there are about 600 AM stations on the air in Mexico. If you have logged the aboves you'll have 7 Estados (including the Distric-to Federal). That leaves 23 Estados and Territorias to go. Some are very difficult catches, like Guerroro which is best known for Acapulco. Others are virtually impossible. For those who have logged 48 or 49 states and 9 or 10 provinces and feel those last states to be frus-trating, here's a new one; see how many Estados you can log!

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THE FIRST 20 MW COUNTRIES IN ENGLISH

One of the biggest obstacles most DX'ers face when they first start to listen to foreign stations is the language barrier. At least that is the most common complaint heard. This is not necessary at all, since from the Caribbean area alone it is possible to hear a number of countries that use all English or at least feature English ID's at a time favorable for North American listeners. Here then is a list of 20 countries which have English language broadcasts on the MW band, along with some suggestions for hearing each. All times used are 24 hour GMT. These are not necessarily the only stations in these countries that use English, but those listed here are the easiest possibilities for reception.

(1) ANTIGUA ZDK on 1100 khz is not too difficult throughout most of the US until 0504 s/off and again at 0956 s/on. Evening programming is rock, soul, and calypso. ID's a lot in US fashion. Good during aurora.

(2) BAHAMAS ZNS1 on 1540 is one of the first Caribbean stations to be heard by the beginner. Catch WPTR off and loop out KXEL and there is ZNS with their "Music Till Dawn" program of quiet mx.

(3) BARBADOS 900 khz is easiest at sunset and at 0930 s/on. An aurora regular at many locations. ID's as Radio Barbados and also mentions CBC-the Caribbean Broadcasting Corporation.

(4) CAYMAN ISLANDS on 1555 and 1205 are among the easiest of the LA splits since their 1976 inauguration. Sign off is currently 0430 and they return at 1000 or 1100. Programming includes opera, BBC News, discussion programs, and easy listening.

(5) BELIZE 834 khz is probably the easiest of the Latin splits. Both Spanish and English are used, with programming varying from rock to classical music. Signoff is 0500.

(6) COSTA RICA TIFC 1075, "Faro del Caribe" has much English religious programming but is very hard to hear with even the best receivers. Somewhat easier is TIQ, Radio Casino, which has settled down on 1176 and can be heard with EE programming for an hour in the evening.

(7) DOMINICA Roseau on 595 with 10 kw is heard up until 0230 s/off fairly regularly on good receivers, but don't expect to hear them on a transistor portable or DX160. Programming is usually religious oriented. The signoff is read over choral mx and mention is made of the Dominica Broadcasting Company.

(8) GUATEMALA TGN on 730 (Radio Cultural) has an EE program daily from 0300-0330 but it is rarely reported. TGMA 900 khz, Radio Amatique, has an EE show Saturday eves but is equally rare.

(9) HAITI 4VEF on 1035 carries a goodly amount of EE before s/off. The entire s/off announcement is in EE and has been heard throughout much of the eastern US.

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(10) JAMAICA has 2 networks-RJR and JBC-which run all night with a program of pop, rock, soul, and reggae. JBC is on 560, 620, 700, and 750; RJR is on 550, 580, 720, and 770. Montego Bay on 700 is most commonly reported.

(11) MEXICO has many English stations, including XERF 1570, XEROK 800, XETRA 690, XEPRS 1090, and XEVIP 1560. Take your pick, one or all will be easy from your location. See "Your First Ten Mexicans" elsewhere in this booklet.

(12) MONTSERRAT ZJB on 885 with 1 kw and R. Antilles on 930 with 200 kw are the shots at this small island. You'll need a good receiver and good conditions to squeeze an ID out of ZJB; as for Radio Antilles their directional antenna makes them a tough shot in some parts of the country and not too hard in others.

(13) NETHERLANDS ANTILLES PJB on 800 with 500 kw is your only shot at the "ABC" islands-Aruba, Bonaire, and Curacao. It doesn't matter that you have only one shot because this station is heard everywhere in the U.S. (barring extreme CKLW interference) on most any kind of radio you can imagine. Has been logged in Michigan in spite of CKLW so you get an idea of their signal strength.

(14) PUERTO RICO has several English stations but none are really easy catches. Occasionally reported are WHOA 870 and WBMJ 1190. The Spanish outlets from this island are much easier; if you want to give them a try check 580 for WKAQ (all news), WAPA 680 (SS pops), WQII 1140 (managed by NRC's Dave Gleason and heard in the Northeast not infrequently during aurora), and lastly WRSJ 1560 which can be heard occasionally signing on at 0900 GMT with the Star Spangled Banner.

(15) ST. KITTS is best heard through either ZIZ 555 or R. Paradise on 1265. ZIZ is not too difficult for those owning radios with fair selectivity. Radio Paradise is probably slightly easier, having often excellent signal strength and being audible on all sorts of radios.

(16) ST. LUCIA is not too easy but nonetheless is heard a couple of times per year. Radio St. Lucia on 660 khz is usually heard on MM's at or after 0930 s/on. As this was being written WNBC went AN and if this is permanent, St. Lucia will be tough!

(17) SURINAM SRS on 725 is often quite strong, and mixes in ID's as "Super Radio Station" with Dutch and Hindustani.

(18) US VIRGIN ISLANDS haven't been reported outside of Florida recently but remain very possible. WWVI 1000 at their 1000 GMT s/on Monday mornings is probably the best bet.

(19) BRITISH VIRGIN ISLANDS ZBV1 on 780 is not too terribly hard at sunset before WBBM fades in. Programming is rock and reggae. Those in the west might fare better at s/on.

(20) CANADA needs no further comment.

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SOME ADDITIONAL TIPS ON LOGGING THE AMERICAS

Although we have established that the DX'er can expect to log 20 countries in English from the Americas, there are a number of easy catches in countries that use only Spanish. In this brief article we will try to give the reader an idea of the easiest stations and how to log them. Don't expect to hear each and every one of them as that will depend on your local interference.

CUBA is quite easy. Try 590, 600, 640, 690, 720 or 880. CMQ with the R. Liberacion program on 640 is the easiest unless KFI is just too close to you.

COLOMBIA is another easy one. HJED 820 (La Voz del Rio Cauca), HJCY 810 (Radio Sutatenza) and HJCJ 1040 (Radio Super) are probably the strongest of the bunch although there are many more. On Monday mornings with many of the clear channel stations off others are easy.

VENEZUELA is also rather easy. YVOZ 1200, Radiotiempo, is heard most every Monday morning. Other catches reported frequently include YVLT 830, YVLH 650, and YVRS 1020.

DOMINICAN REPUBLIC is usually first heard via HIJB 830 with WCCO looped or eliminated through aurora. Also fairly easy are HIBG Radiolandia on 1160 and HIBE on 1180 with WHAM off on Sunday mornings.

EL SALVADOR has only one good shot, namely YSS R. Nacional de El Salvador on 655. This station is very strong and can be heard even on a transistor portable under given conditions.

NICARAGUA is not all that easy but then again should not take a lifetime to hear. YNX 750 (Estacion Equis) is the best bet if WSB is not a headache; otherwise resort to trying for Radio Corporacion 540.

GUATEMALA is reported frequently via R. Nacional 640, TGW. Recently a 100 kw transmitter was inaugurated so this one should be an even more frequent catch. Look for marimba music and soccer matches. Sign-off at 0600 begins with the first part of Tchaikovsky's Piano Concerto.

ST. PIERRE ET MIQUELON is not in Latin America but in the mouth of the St. Lawrence River. A station on 1375 relays France's ORTF and is heard throughout the Northeast.

ECUADOR is not easy these days. Best bet appears to be Radio Tropicana 540 which can be on top of the channel Monday mornings with XEWA off. With top notch rigs R. Suceso on 995 is heard albeit infrequently.

COSTA RICA will be elusive if your receiver can't tune for the splits. Assuming an average radio you'd best try for R. Reloj 700, R. Mil 1000, or R. Capital 1120, preferably when the clears on those channels have taken the morning off. This country is immeasurably easier on a good rig that can separate splits; try for R. Rumbos 527, R. Omega 575 (is easily the best bet), R. Colombia 725, R. Titania 825, and R. Fides 1025. Omega on 575 is quite strong; Titania is a distant second.

After getting yourself indoctrinated through the above, you should be capable of going after the very tough catches and discovering changes.

XEBS|1410
Radio Sinfonola
La Mejor Música Ranchera
Formato RM

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TA'S FOR BEGINNERS

Several valuable hints and techniques for hunting TA's are offered here prior to suggesting target stations.

*Very slow tuning is of the essence as a weak signal between two powerful frequencies is often overlooked.
*Signal seeking with the BFO turned on will often reveal the presence of a weak carrier that would otherwise be overlooked.
*A copy of TVI frequencies (interference from nearby TV sets) which appears herein should be kept handy as sometimes what is thought to be an exotic transatlantic station is nothing more exotic than the neighbor's TV set.
*Some nights will produce readable audio from 100 TA's while other nights will yield absolutely nothing. In-between nights will show the presence of TA stations by a "whistle note" or heterodyne at an audio frequency. Due to the great distance and multiple hops, TA signals fade greatly; stick with that weak carrier for a while before giving up.
*Identification is often a problem as announcements are infrequent or timed to coincide with fades, hi. Interval signals are often a great help; these are short pieces of music played repetitively at s/on and on the hour, half hour, etc. Most of these IS's appear in the World Radio TV Handbook. Rough identification is also possible through direction finding via a loop.

It is unlikely that any DX'er will log all the countries and stations below at one sitting, but it is possible that he may log most or all of the below in one season of TA hunting. Bear in mind that receiving TA's depends greatly on: (1) your receiver selectivity, (2) your location; northeast coastal locations seem to be best and West Coast reception takes some real doing, (3) your antenna, and (4) the state of the 11 year sunspot cycle. An Oklahoma DX'er with a TRF or DX160 reading this in 1979 might indeed conclude that TA's are the products of highly creative imaginations.

WEST GERMANY: perhaps the easiest TA of all is the 800 kw station at Langenberg. When conditions are top notch it has been heard on transistor portables. Runs all night with German pops.

FRANCE: is another of the easier countries. Nice on 1554, Bordeaux on 1205, and Lille on 1376 are the best bets. Sign on has been changing a lot recently but now is at 0400 or 0430. Many frequencies carry the France Culture program in Arabic, Portuguese, Italian and Spanish at s/on.

GUINEA: after a power increase in 1976 this became the most regular TA but is not quite the strongest. Programming is African music with French and vernacular announcements. ID is "La Voix de la Revolucion" in French, on the hour and half hour. On all night.

ENGLAND: another good shot. BBC stations on 647, 1088, and 1214 are the most commonly reported, with 1214 probably the strongest. As of recent 1214 and Guinea 1403 are the best west coast shots at TA's.

SPAIN: near equal strength can be had from Madrid 584, 683 Seville,

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and 737 Barcelona. These stations run more power during their night-time period so reception is best at local sunset in North America.

PORTUGAL: rates as easy due to the transmitters on 1034 and 665. The former runs until 0200 and the latter is all-night. Lisbon 1034 rates as one of the most reliable TA's.

ALBANIA: quite often heard is the 1394 transmitter in Lushnje with a Spanish program until 2330. The modulation and power levels used make this country one of the first that you will hear in spite of the fact that it is not as close as some of the others. Also heard well at times is Durres on 1457 and 1214.

MONACO: merits consideration as the strongest TA and possibly the most reliable. Another station that can be heard on a household radio when conditions are right. Often heard is the English program scheduled from 2330-2400 s/off. As this is a Trans World Radio station all programming is religious. Sign on varies (usually around 0430) and commences with a music box interval signal.

ITALY: Rome on 845 is the least difficult, running all night with a program of pops. News is given in a variety of languages. Often heard with quite good signal strength.

LUXEMBOURG: rates as easy due to the 1200 kw transmitter on 1439. This is a commercial Top 40 station and can be quite amusing with their mix of outdated US rock and roll and "Euro-rock". Made a little difficult by the domestics on 1440 but when they are in with good strength that doesn't matter any more.

ALGERIA: is easy for those who have radios that tune below the edge of the American broadcast band; Ain Beida on 529 is often quite strong and steady. Oran 548 is a distant second.

SENEGAL: makes it's presence known through Dakar on 764, which is one of the first TA's that most DX'ers here. It is usually best at 0600 s/on which commences with 5 minutes of an IS on a khora.

MOROCCO: has become easier of late. The new (1977) transmitter on 1044 is often the best TA on the band with their rock and jazz programs. Also heard are 612 (Sebaa-Aioun) and 935 (Agadir).

As a challenge beyond the easier TA's listed above, the following are heard by good DX'ers fairly frequently:

POLAND: loggable via Warsaw on 1502, but not an easy catch. Various languages can be heard, with the piano IS of SW fame heard on the hour.

LIBYA: your best shots are 1124 and 827. The transmitter on 539 is occasionally reported; overall 1124 is probably easiest.

SIERRA LEONE: formerly somewhat easier, it has not been regularly reported for some time. S/on is at 0555 GMT when an IS is played.

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HOLLAND: Lopik on 746 is not too difficult at 0445 s/on. Look for a woman announcer giving ID's and an IS.

SWITZERLAND: is best heard thru Beromunster on 1562. While not heard as often as the "easy" TA's above it can approach them in signal strength. Look for German announcements and pop instrumentals.

CZECHOSLOVAKIA: Bratislava on 1097 makes this one of the TA's that fall soon after the regulars are heard. Also heard with decent frequency is Prague on 1286, carrying foreign and home services.

AUSTRIA: tune to 1475 if you want to hear this one. Most loggings are at the 0400 s/on, when an IS is repeated and a female gives an ID after every third IS.

EAST GERMANY: Dresden (Burg) on 1043 is not a tough catch with their easy listening and light pops music. The rest of tbe transmitters are much more difficult. Dresden dominates 1043 most of the time, often with clear signals.

TURKEY: it is debatable whether this should be in this section or up with the easier TA's. The 1016 station in Istanbul has been heard by many DX'ers with excellent signals since the 1974 inauguration. Has been heard as far west as Denver. Often times this station will overwhelm the powerful West German station on the same frequency.

UPPER VOLTA: has become a more frequent visitor of late on 746. Until 0000 s/off they provide fair signals with Arabic/African mx.

In regards to the rest of the European countries, they will be found to be very rare catches for the most part. Best bets are: Norway 1313, Sweden 1178, Finland 962, Hungary 539 or 1187, Romania 1052, Bulgaria 1223 and 827, Yugoslavia 1124,1133, and 1007, Greece forget it, and the USSR on 1106, 1034, and 1124. Good luck!

GRA
GRUPO RADIO ALEGRIA, S.A.

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REPORTS TO LATIN AMERICA

By Cesar Objio

Many are the complaints voiced by DX'ers through periodic publications against the non-replying policy of certain stations in certain countries. Station managers or directors are constantly being blamed either by Bulletin editors or by angry reporters after several unanswered reports have been sent, despite the IRC's sent with reports. Usually they ask: "Why this silence? Why not answer the kind and almost begging letters sent to the stations?" The answers to these questions rarely come up. To what countries are these reports sent? To Latin America - an area which, for the same reason, is especially "blacklisted" by DX'ers.

It is a usual habit of people, including DX'ers, to think mainly of themselves, caring little for what anyone else might think, blaming others for things, and claiming that their rights be considered when their requests are not satisfied. But has anybody given a thought, even for a moment, to the reasons for this, and placed himself in that "somebody else's" place - that is, in the place of the LA station director? I doubt it. But I can tell you that, living as I am in the area; I have sometimes been in that place, as a DX'er willing to help other DX'ers in various countries. And I have seen myself in uneasy situations due to lots of letters received by stations asking for verifications. (This is in no way to imply that these reports should not be sent).

Too much, much too much has been said about how to write a correct reception report; it is probably useless or unduly repetitious to keep mentioning the same things time and again. But it's almost unnecessary to say this since the blame is easily hung over the necks of beginners and non-club members, dedicated to the hobby for themselves without being aware of the strict rules of the hobby. Yes, there are many such persons, that is the truth. But these are not the only cases seen by me here in Latin America. There are many things to be taken into account when mailing a report to this large area of the globe, things that should be known to everybody, even if he is not an experienced DX'er:

1. Languages. Latin American countries speak Spanish, Portuguese, or French mostly, as you can tell from listening to their broadcasts. Then why send a report totally in English? Have you considered that if you don't speak Spanish, the station personnel may not speak English? What would you do if you were to continually receive letters in Spanish, didn't understand them, didn't know what to reply, and didn't have sufficient funds to pay for bi-lingual employees? The solution to this problem is simple: send a recorded tape with at least one recorded ID of the station heard. This is a good way to make yourself understood. If you don't own a tape recorder, use one of the Spanish, Portuguese, or French report forms that have been provided by the DX clubs; this will also help. But never take for granted that there will be someone at the station who speaks English. By all means try to use Spanish - your efforts will produce improved results.

2. Details. A detailed report is a must, and names should be mentioned; if you don't speak the language, pay particular attention to commercial names which are constantly being repeated. Try to catch and include them - even if they are not correctly written, they can be understood by the pronunciation. Other helpful items are record titles; most of the stations usually buy foreign-made records and English names of popular songs can be mentioned and will be understood. Likewise soundtrack music from well-known movies.

3. Postage. Most of the LA stations are impoverished enterprises with two or three station employees including the owner, and have no personnel for the task of replying to large numbers of letters in unfamiliar foreign languages. At first they will be overjoyed, yes, but later they get tired of this since it will not help them commercially; on the contrary, money has to be spent for stamps, and when you have to reply to 50 letters just in courtesy, well, this is more than just tiring. Postal rates in the Dominican Republic are not the same for every country of destination: for instance, an airmail stamp

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to the U.S. costs 10¢; to Canada 12¢; to Europe 33¢; Africa, 36¢ to 55¢; Asia 38¢ to 55¢; and 50¢ to Australia - our peso is equal to one American dollar. Another important fact is that certain LA countries will not exchange IRC's (e.g., Bolivia - Ed); even in countries that will accept them, many station personnel and local post office employees in remote cities will be unable or unwilling to exchange IRC's without a direct order from the Central Communications Office in the country. Many station owners have to just pile up these effectively useless papers or throw them away; other station owners don't even understand what IRC's are for. Remember, they are not even exchanged in the Dominican Republic. (These things change from time to time with the vagaries of international politics - be sure to check with your local post office when sending out IRC's. - Ed). Naturally I don't recommend against sending IRC's to countries which honor them, but (especially to stations remote from capital areas) mint postage stamps are much better. (See the ad for Sax Ringler's stamp service in IDXD circa February, 1967. Ed).

4. The DX Hobby. Most important is this: our DX hobby is not understood at many stations, especially in remote areas. They don't quite understand what is being asked of them in a DX report, and they don't appreciate or even understand such specialized hobby terms as, "QSL" and the "SINPO" code.

After qualified DX'ers visit the stations and talk to the officials, many station officials aren't willing to believe the DXer's explanations because they think it strange or queer, and they repeatedly ask, "Is that all they do, listen to the radio?" and then they laugh. Yes, this is the sad truth - don't think I'm exaggerating - it's real. (Yes, Cesar, we can confirm this - even at stations in Baja California which had perfect English speakers, the very concept of DX'ing seemed to be alien. Perhaps this is one of the first observations that has been made about DX'ing as a sociological and cultural phenomenon - certainly we're all aware that the DX'ing hobby, with its strictly abstract values and measures, is restricted to just a few of the countries of the world. Ed). A proof of this is: how many DX'ers do you know of in Latin America? Not many - they can be counted on the fingers of your hands with fingers left over - because the hobby is unknown in Latin America and because most of the hobby publications are in English.

Another fact deserving of mention is that many remote LA stations are unwilling to differentiate between MW and SW reception reports. Many times BCB reception reports are verified for SW frequencies due to misunderstanding by the station personnel. Many replies to reception reports do not contain verification statements and cannot be considered as QSL letters. Naturally, not all replies are like this; there are exceptions and many stations, especially in the capital cities, have been informed about the DX hobby and thus can distinguish between friendly letters and DX reception reports. Frequent letters from foreign DX'ers explaining the DX hobby have really helped to open the doors of ignorance in some places and have increased understanding of the DX hobby at some stations.

Now, returning to the main subject, am I really wasting my time and yours by repeating the same information about QSL's again? I don't think so, because I've seen entirely too many poor reception reports at Dominican stations - entirely in English and containing inadequate program details. Many of these reception reports have been sent by supposedly well qualified DX'ers who should be well familiar with the standards of reception reporting. But some of these DX'ers continue to send meaningless or inadequate reports in spite of their experience in such matters. Please, gentlemen, improve your reception reports.

Finally, don't forget that you are asking a very real favor of the stations. Try to put your reception reports in as clear and simple a format as possible - give help as much as you can to the stations - the DX'er is much more interested in verifications than are station directors and personnel. -30-

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STATION NAMES VS. CALL LETTERS
by Cesar Objio

As one of the Latin American DX'ers, I am an eager reader of the logs published by the different clubs in their bulletins, which I receive pelodically, always trying to find in them those L.A. stations heard by the members in other countries, and mainly interested in Dominican stations, to see which one is heard, how and where, sometimes happy when I see one of our low-powered stations heard far away, or disappointed when I don't see anyone in the logs. For instance, Radio ABC, a station with 5kw on 540 is being widely reported by DX'ers in the East Coast and even in the Central States of the U.S. over other stations in Central America on the same frequency. This is a very interesting report. (Other examples are: R. Santa Maria and R. San Pedro which were heard respectively on 2380 and 3200 kHz some time ago, although they were only harmonics due to technical imperfections in their MW transmitters, with only 1kw each onn 1190 and 1600, heard in Sweden and elsewhere.)

But there is a mistake always made by DX'ers outside Latin America, and it is that they report these stations by mentioning only their call letters, not with the name that they are usually identified with in their own places, and which they prefer. Call letters are practicall an obligation based on international agreements, rarely mentioned by these stations. If you take a look at the WRTVH you will see that every station besides the call letters, has a name, with the partial exception of Mexico and Puerto Rico. Stations in this area should not be reported like this: Dominican Republic: HISD; Costa Rica: TIFC; etc., because although their frequencies might be well known the information is not complete, since in their own countries they are really named and known as: Radio Television Dominicana, Faro del Caribe, etc.

Sometimes when dealing with MW stations I have seen reports like this: Panama, HOJ2; El Salvador, YSEB; Nicaragua, YNW2; then all took at the WRTVH is needed in order to see what is the name with which the station is daily identified on the air. Those reporters forget that these stations mention their names, which they probably heard, and are: Ondas del Canajuga, Cadena Radial Salvadorena and Radio Mundial, perhaps adding the call letters, but not always.

Now, where do these names come from? Mainly from the town or country in which they are situated, or a nearby river, a region, a business form, a frequency or sometimes with an attractive name to appeal to the listeners liking)examples of the above are: R. Caracas, R..Haiti, Ondas del Yaque, La Voz del Istmo, La Voz de la Telefunken, R. Mil, La Voz Amiga, etc).

Another fact which is added is that in most of the countries every transmitter of one station has a different set of call letters; you may be listening, for instance, to a station in SW from a certain country on a certain frequency and, according to WRTVH, call letters are XEWW, but you hear them announce themselves as XERH or "La RH de Mexico" or with their name "R. Difusoras Comerciales", so why the difference in call letters? It is because they are mentioning the MW transmitter, since this is a commercial station with their transmissions intended only to be heard by local or national audiences, not as external services as government stations in other countries do. This was a typical case read some time ago in DX'ing bulletins, and one which gave some trouble to some listeners.

As a relief to DX'ers every station should have only one set of call letters comprising all transmitters, as is being done here in this country. For example, R. Television Dominican call letters are only HISD for all transmitters, and there are 10 in all (6 on MW. 2 on SW, and 2 on FM.); some years ago they were HI2T, HI3T, HI4T, etc. In the beginning stations in the capital of the country, or in Santo Domingo, only used 3 letters, like HIG, HIL, HIN, etc.; when there was another station in another town a number was added according to the distance from the capital: in San Cristobal, HI1R; in Bani, HI3V; in Santiago, HI8Z; in Puerto Plata, HI9U. In the case of R. Television Dominican, they chose the letter T because it belonged to one member of the Trujillo family, number 2 because it was originally in Bonao, a town located some distance from the capital; and the first

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name used by the station, "La Voz del Yuna", came from a river passing near the town. Then after Trujillo was killed, the numbers were eliminated from the call letters, no matter how many transmitters they used.

Finally, I wish to express my recommendation that whenever a station is reported, the name should be mentioned in preference to the call letters in order to make it more specific, and this is more important when the report is mailed to the particular station asking for a verification - the station is known in the town by the name, not by the call letters. Please bear this in mind.

Latin American Names
--Cesar Objio

There is a common mistake made by U.S. DX'ers when they speak about a Latin American personal name; we've usually observed this error in DX bulletins (and even in World Radio TV Handbook) when station owners, directors, or verification signers are mentioned. Personal names in Latin America are used in a rather different way than in the U.S. and it's important to bear these differences in mind.

Names in the U.S. are used in the following way: When a child is born he receives a given name such as John or Peter, a middle name, and his father's last family name as a surname; his completed name will then be something like "John Theodore Smith", which is often abbreviated to "John T. Smith".

In Latin America when a child is born he receives two names, for example, "Jose Manuel". If he is a legitimate male (that is, born from a legal marriage), he will be entitled to his father's last name of family name, and finally his mother's family name; if his father's family name was "Perez" and his mother's family name was " Garcia", for example, his complete name would be "Jose Manuel Perez Garcia".

Sometimes this full name is abbreviated like this: "Jose Ml. Perez G." or "Jose M. Perez", or just "Jose Perez". When this person does not use his second name, i.e., "Manuel", there is a possibility of error if he writes his name like this, "Jose Perez Garcia". In Latin America there will be no mistake, but in the U.S. DX'ers can't distinguish between a first name (nombre) or a last name or family name (apellido), and sometimes they incorrectly abreviate the name like "Jose P. Garcia". This is wrong since his father's family name (which is the more important) is not mentioned as fully as ought to be. The father's family name is not abbreviated. The mother's family name can either be used fully or omitted, but never appears alone or abbreviated. There is no way to show a U.S. DX'er whether a particular name is a first name or family name; this knowledge can only come from experience, although first names are usually the same as in English but translated.

As a final example I will use my name. My complete name is "Cesar Federico Objio Gonzalez". "Cesar" is my first name (premier nombre), "Federico" is the second name (segundo nombre), "Objio" is my father's family name, and "Gonzalez" is my mother's family name (apellido paterno and apellido materno, respectively). As you can see, I usually write my name as "Cesar Objio" for short, or "Cesar Fed. Objio G.". But I will never write it as "Cesar O. Gonzalez" as that would be completely incorrect.

I hope this explanation will clear up this problem and that DX'ers will realize its importance and take more care in the future.

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Frequency and Callsign Allocations in South America

Ronald F. Schatz

Just as American stations have callsigns indicating their locations either east or west of the Mississippi River (W or K), so most South American nations assign calls to their respective stations according to their specific locations within their countries. Likewise, as North American stations are assigned to operate on either clear, regional or local channels, so are most stations in South America in various ways. With reference to the accompanying map we will see how international treaties and internal policies determine frequency and callsign assignments for the individual South American nations:

Argentina

Argentina has joined Bolivia, Brasil, Chile, Paraguay and Uruguay in a NARBA-like treaty. Bolivia later succeeded from the association. This "ABC" treaty is years older than NARBA.

"Clear" channels, protected by neighbouring countries, include 710, 750, 790, 830, 870, 910, 950, 990, 1070, 1150, 1190, 1230, and 1310 kHz.

Note the map: Stations of the government's "Radio Nacional de Argentina", regardless of location, hold the calls LRA. Except in the Capital, the LRA is suffixed by a numeral. Private stations suffix a numeral to the appropriate prefix on the map (LR and LS in the Capital). E.g., a call such as LU27 indicates that the station is located in one of the southern provinces.

Bolivia and Paraguay

The clear channel for Bolivia is 1020 kHz; for Paraguay - 920 kHz. Each station affixes a sequential numeral to the appropriate prefix on the map.

Brasil

Brasil's clear channels include 600, 700, 740, 800, 860, 880, 940, 980, 1000, 1040, 1100, 1180, 1220, and 1280 kHz. There are also "graveyard" frequencies: 1460 kHz and all the 1500's.

The older call assignments of the single-digit type (PRG2, ZYD8) have no special meaning, except that the ZY's tend to be newer stations. The latest assignments indicate the Brasilian State within which the station operates. These calls end in a 2 or 3-digit number. E.g., ZYU42 would be found in Rio Grande do Sul. ZYZ212 is in the State of Guanabara (Rio de Janeiro).

Chile

Clear channels for Chile are 570, 660, 760, 1060, 1180, and 1380 kHz.

The regional prefix on the map is followed by the frequency of the station in 10-kHz, such as CB166 - 1060 kHz - Santiago. If several stations are assigned the same region and frequency a final letter is added in sequence: On 1520 kHz, CD152, CD152A, CD152B, etc. The same system is used on short wave with the prefix CE-.

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Colombia

In Colombia, the frequencies 1000 kHz and below are "international" channels assigned one station each. They are divided regionally as follows:

For Bogotá: 540, 570, 610 ... every fourth channel ... 970 kHz.
For Medellín and Manizales: 550 ... every 4th channel .. 990 kHz.
For Cali & vicinity: 580 ... every 4th channel ... 980 kHz.
For Barranquilla, etc: 560 ... every 4th channel ... 1000 kHz.

The higher frequencies, 1010 - 1600 kHz, are allocated with three-channel spacings (thus three frequency groups) to the individual Departments, Intendencies amd Comisaries:

1010, 1040 ... 1580 kHz: Cundinamarca (Bogotá), Atlántico, Nariño, Córdoba, Cauca, Magdalena, Norte de Santander, Sucre,

1020, 1050 ... 1590 kHz: Antioquia (Medellín), Valle del Cauca (Cali), Boyacá, Tolima, Huila, César, Meta, Chocó, La Guajira, Caquetá, Cundinamarca (rural).

1030, 1060 ... 1600 kHz: Santander, Bolívar, Caldas, Risaralda, El Quindío,

The system seems to have been dropped, but the third letter of the callsign generally indicates its regional location:

HJA. Atlántico, Bolívar, Córdoba, Sucre.
HJB. Magdalena, Norte de Santander, César, La Guajira.
HJC. Cundinamarca (Bogotá).
HJD. Antioquia (Medellín), Chocó.
HJE. Valle del Cauca (Cali), Cauca.
HJF. Tolima, Caldas, Risaralda, Huila, El Quindío.
HJG. Boyacá, Santander, Arauca.
HJH. Nariño, Putumayo.
HJI. Meta, Caquetá.
HJK. Cundinamarca (Bogotá).

Ecuador

The final number in the callsign is a regional indicator:

HC..1 Pichincha (Quito), Imbabura, Carchi.
HC..2 Guayas (Guayaquil).
HC..3 Loja, El Oro.
HC..4 Manabí, Esmeraldas. (Pacific coast).
HC..5 Chimborazo, Azuay, Cañar.
HC..6 Los Ríos, Tungurahua, Cotopaxi, Bolívar.
HC..7 Napo-Pastaza.

Perú

The first three letters of the Peruvian callsign, assigned in sequential order, are OAX, OBX, OCX, OAZ, OBZ, or OCZ. This is followed by a number indicating the station's regional location:

O..1. Piura, Lambayeque, Tumbes.
O..2. Cajamarca, La Libertad.
O..3. Ancash, Huánuco.
O..4. Lima, Junín, El Callao, Pasco.
O..5. Ayacucho, Huancavelica, Ica, Apurímac.
O..6. Arequipa, Tacna, Moquegua.
O..7. Puno, Cuzco, M. de Dios
O..8. Loreto.
O..9. San Martín, Amazonas.

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Uruguay

Clear channels for Uruguay include 610, 650, 770, 810, 850, 1050, and 1290 kHz.

Callsigns in Montevideo fall with their respective frequencies in an orderly sequence: CX2 - 570 kHz, CX4 - 610 kHz .... CX50 - 1530 kHz, CX52 - 1570 kHz.

Outside the Capital there are several systems: CW plus an odd number is the general rule, but there is a CX33, CW54 and CW56. Newer stations carry Chile-type calls based on frequency. These begin with CV or CX. E.g., 1560 kHz carries three stations: CW51, CV156 and CX156.

Venezuela

Just as in Colombia, the frequencies 1000 kHz and below are "international" channels, and they are 4-channel spaced within a given region:

540, 580 ... 980 kHz.	Maracaibo, western Venezuela.
550, 590 ... 990 kHz.	Caracas.
560, 600 ...1000 kHz.	Eastern Venezuela.
570, 610 ... 970 kHz.	Valencia, Maracay.

The higher frequencies show no apparent pattern, except for a 50-kHz separation between stations in Caracas. The Venezuelan broadcast band ends at 1450 kHz!

The third letter in the Venezuelan callsign tends to serve as a regional indicator, as is the case in Colombia:

YVK.	Distrito Federal (Caracas).
YVL.	Miranda, Carabobo, Aragua, Guárico.
YVM.	Zulia, Lara, Falcón.
YVN.	" " "
YVO.	Táchira, Trujillo, Mérida.
YVQ.	Sucre, Anzoátegui, Bolívar.
YVR.	Monagas.

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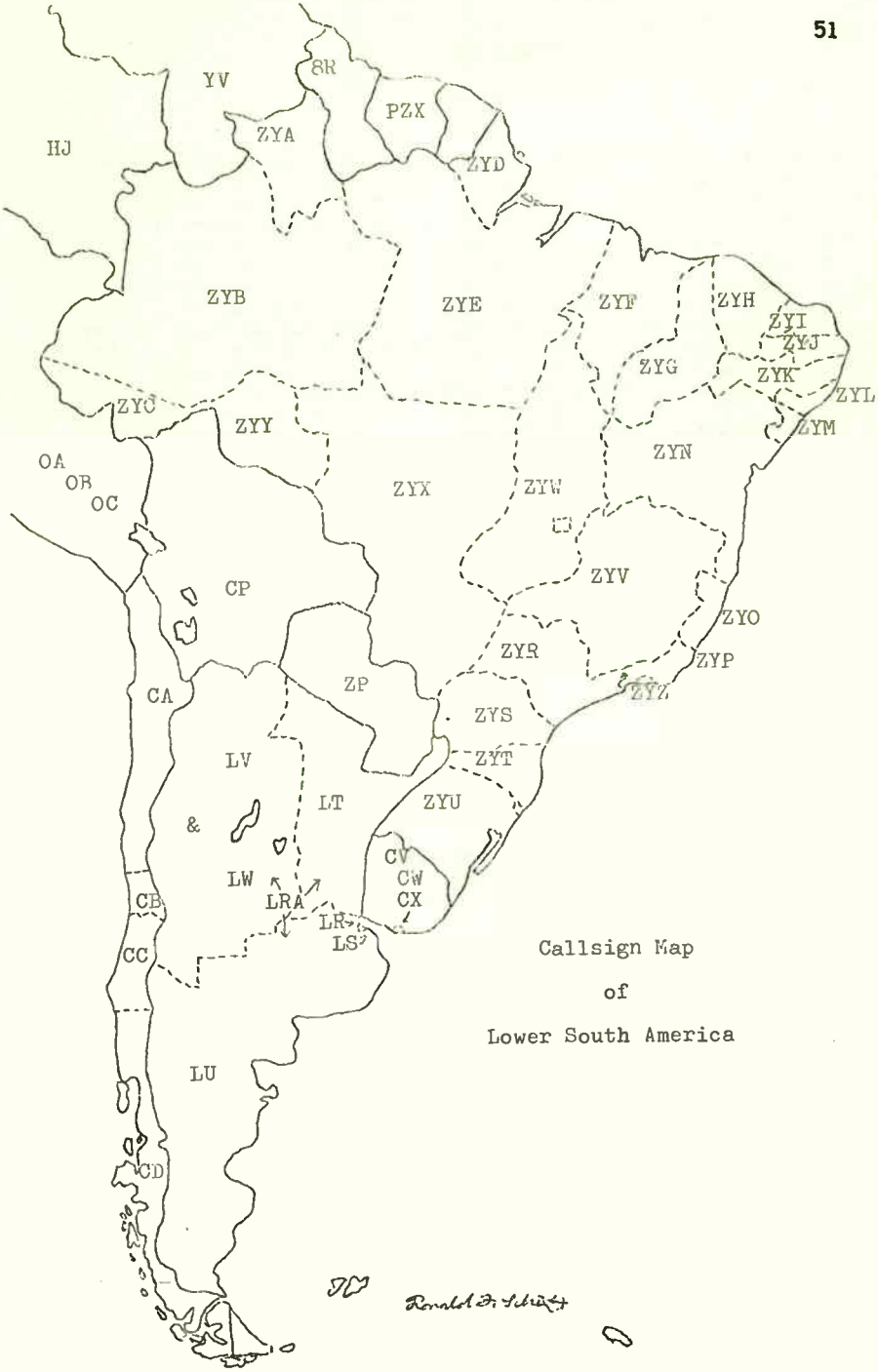

Callsign Map

of

Lower South America

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HETERODYNES

by Ken Brownless

First of all, the systems of frequency allocation require attention and in Europe, Africa, the Near East and Russia from 511 to 1546 kHz there are 9kHz divisions and from 1546 to 1602, 8 kHz divisions. The other continents use 10 kHz divisions over the range of either 530 or 540 to 1600. A "Split Frequency" is one that does not end with a zero figure. We have many of these with the 8 or 9 kHz separation system, and HETERODYNES occur when there is a station, say on 960, and another on 962. The IF circuits of a receiver pass two frequency components which correspond to the two station carriers, and these IF components differ in frequency by 2 kHz. When the IF components reach the detector stage, the detection process produces a product mixing of the two components, and so creates the 2 kHz difference frequency. 2 kHz is 2000 cycles (musically speaking), and in the audible range of frequencies. Audible heterodynes may vary in musical frequency from bass to treble with the former being exemplified by the low pitched growl that is in the bass register of lower frequency, consequently the difference involved being less than 2 kHz for the treble register of higher frequency which is involved when a note (whistle) is heard around 2000 cycles. We have looked at the AUDIBLE range of heterodynes, and we now turn to the INAUDIBLE type of heterodyne, usually known as the Sub-Audible Heterodyne (S.A.H.)

Let us say that we have a station "spot on" the frequency of 770, and another station on 770.020 kHz. In this case the heterodyne is 20 Hz and so is inaudible, i. e., a SAH. Although these heterodynes are inaudible, the effect can be seen on the S-meter or heard in the form of the flutter fading effect. These take the form of signal strength variations which repeat themselves in a regular way every few seconds. This is your second carrier causing the SAH, and the second carrier on a frequency is normally much weaker than the dominant one. This applies to the entire MW frequency spectrum.

On frequencies above 1400, when conditions are disturbed, what appears to be a similar effect may be noted, but this is not the SAH effect because the time intervals between the pattern of fades are not constant.

The problem involved in causing SAH's is that of frequency drift, and in checking the E.B.U. Frequency Measurement List, it may be noted that stations in the Iberian Peninsula and North Africa are the worst offenders. Cairo on 710 measured 710.560, Portugal on 629 measured 628.9716, and Andorra 701 - 701.0256. However, Spain is the worst offender, and we note stations on 1394 measured as being between 1393.891 and 1394.124. On 1412 they are from 1411.893 to 1412.225, plus one of 1414.590, and on 1475 the range is from 1474.885 to 1475.145. Some of the R.N.E. measurements follow, and these are rather more accurate: 638.0046, 772.9997, 853,9918, 988.9996, 998.0140, 1079.0015, 1168.9941 and 1225.0025. These R.N.E. transmitters are much more modern than the ones where the considerable variations are shown. We note that Spain has a plan which envisages all but R.N.E. stations being on VHF, and we believe the other stations must be of ancient vintage and less efficient in "sticking to the frequency". We had an example of this in the UK when R. Humberside first came on MW, when there was a low pitched heterodyne of 200-300 cycles. Their transmitter was old also.

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The audibility of heterodynes is our next point, and during daylight hours the Humberside Het was not apparent, but it became very much so both in the early morning and evenings till close down. On 962 with Atlantis, we had a heterodyne on about 959 (Tunis) which was inaudible during daylighthours but became noticeable around dusk, and though the audio from the heterodyning station was inaudible, the heterodyne was there because the carrier wave was getting through. It was possible when using the S680X to separate the heterodyne from Atlantis, but not so on the Yacht Boy. Heterodynes may also be noted in the evenings in midwinter on European channels one or two kiloHertz away from a frequency ending in zero, and this happens when good conditions prevail over the N. A. path. A heterodyne on 1178 would be from WHAM, Rochester, N. Y. on 1180.

At the beginning we noted the frequency divisions and the importance of stations keeping strictly within these limits will be appreciated. The range is 511 to 1602, and just outside these two frequencies are channels set aside for emergency use, 500, which is one of the international distress frequencies, and 1610, which is the channel used by lightships. If 9 kHz separation were used above 1546, rather than 8 kHz, it would mean an extension of the band to 1609.

SAFETY FOR DX'ERS AND PREVENTATIVE MAINTENANCE
by Jerry Starr, WHOT

You're probably saying "What? Safety for DX'ers?" Well, my friend, right there in your DX den there might be some dangerous gremlins lurking. When improperly used or poorly maintained, electronic equipment can be very dangerous, particularly if you're an "automated" DX'er who DX'es while asleep with unattended equipment. Here is a checklist of do's and don'ts I have accumulated from a good number of years of working with electronic equipment. Some of it was learned the hard way. Please don't you learn it that way!

Receivers:

a. Periodically inspect all your receiving equipment. Remove the chassis from the cabinet and check closely for signs of over-heating and frayed or melted wiring. If something looks suspicious and you're not sure about it, have a qualified person evaluate the situation for you.

b. Clean your receiver's "innards" well; don't let gobs of dust accumulate inside the cabinet - dust can burn. Use a soft bristle brush and vacumn cleaner at least twice a year. Keep it clean!

c. Ventilation of equipment is most important. Don't shove your equipment into something. Don't pile one piece of equipment on top of another. Tubes and transformers give off great amounts of heat so leave the equipment out in the open where it can breathe; equipment all cramped together just doesn't last as long or operate as efficiently when things start to heat up.

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d. Work carefully. If you are planning to modify or repair your receiver, always unplug it first. Even if it's turned off, you can still get a dangerous jolt if the plug is still in. Be careful of power supply capacitors -- even after the set has been turned off and unplugged it may take a few minutes for the charge to "bleed off". If you are doing alignment or some other repair requiring the equipment to be turned on, be careful. The average receiver is likely to have a few hundred volts floating around in it. There are several important rules-of-thumb for working in live equipment. Keep one hand in your pocket - the natural tendency to rest your other hand on the equipment has jolted many a man! Keep all tools on the table, not in your shirt pocket. It's too easy to forget and bend over the equipment, dropping a screwdriber or a pair of pliers into the works. This might produce s short circuit or you might get a nasty shock trying to retrieve the tool. Don't work on equipment if you're tired or sleepy - that's when mistakes happen. The dangers of working on "live" equipment can't be stressed enough; even if one of these shocking experiences doesn't leave you permanently damaged, your equipment may be dashed to the floor and ruined when you instinctively jerk back. And remember, don't even start on a repair job unless you know what you're doing. The Radio Amateur's Handbook provides a good introduction to construction practices.

Tape Recorders:

a. Don't let the tape recorder run for long periods of time unattended. I know many DX'ers like to let the recorder run while they sleep and many have a timer wired in for this purpose. I hate to spoil the fun, but this is a dangerous thing to do. I can personally recall three different times I've seen unattended tape machines catch fire because of overheated motors. These were all heavy-duty units, so needless to say, home recorders can be even more prone to overheating. Suppose a bearing goes dry or something in the transport system jams - it does happen you know. Either of these problems will place undue strain on the motor and it can start to smoke in just a few minutes - and where there's smoke there may soon be a fire! If your machine is running when you're not around, be certain that someone checks it frequently.

b. Lubricate the recorder as recommended by the manufacturer. If a bearing goes dry and becomes scored or gouged, no amount of oiling will fix it. On the other hand, don't over-oil! If the motor should heat up, excess oil could start a fire just that much faster; excess oil can also find its way onto transport belts and wheels. Follow the maintenance schedule in the instruction book carefully.

c. Ventilation is very important for long life in a tape machine. If your recorder has a ventilation fan opening on the bottom or rear, don't cover it up and don't place the machine so that the opening is flush with the tabletop. Just like you, your recorder needs lots of fresh air.

Antennas:

a. Disconnect all outside antennas when not in use and during nearby electrical storms. Even though an electrical storm might be miles away, static charges and induced voltages can appear in an antenna system and damage receiver components.

b. Never suspend your antenna from a power pole. I've seen this done many times. It's not only dangerous but illegal. Keep your antenna well clear of all power lines. Wind storms have been known to blow antennas across near-by powerlines with disastrous results, even though they were a good distance apart. Make sure your antenna is mechanically strong for the same reason.

Fuses:

a. Check all your equipment for fusing. Many smaller pieces of equipment, especially tape recorders, do not have fuses. If you have such a unit, install a fuse or have your serviceman do the job. Alternatively, fused power strips with 8 or 10 power receptacles are available. Fusing all your equipment is quite inexpensive and could well save you the price of new equipment or even a new house should trouble develop.

b. Don't ignore a blown fuse. Fuses aren't like light bulbs - they don't just "wear out". Whether it's a fuse in the equipment or a house fuse, don't just plug in a new fuse and forget about it - locate the reason for the fuse blowing and repair it.

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c. Intermittent shorts in power supply filter capacitors are a common cause of mysteriously blowing fuses; sometimes the equipment will operate for hours before the replacement fuse blows. If this problem is suspected, look for signs of overheating or charring of resistors in the power supply. Trust your nose - often the smell of overheated resistors or insulation is the first sign that something is wrong somewhere. Be particularly alert for the smell of overheated components after you've turned on an untested piece of gear for the first time; by the same token, equipment which has been unused or stored for a long time should also be treated with special care. Electrolytic power supply capacitors very often go "sour" after prolonged storage.

d. Always use the proper fuse. Don't replace a fuse with one of a higher rating, a penny, paper clip, or such. It's generally better not to use "slo-blo" fuses if it can be helped - your equipmnt may suffer extensive damage in the few seconds while the fuse is 'slo-blo'ing". To defeat the safety factor of a fuse is to invite big trouble.

Grouding:

a. Equipment should be grounded for safety to a common ground - that is to say that all ground wires should terminate at the same point. The most popular and easily available ground is a cold water pipe. Ground clamps are available for this pupose at any electric supply store. Don't try to ground to a hot water pipe or a gas pipe. If your den has an outside window, a better solution is a good grounding rod, also available from the electrical supply store. Be certain to drive the rod deep into ground that will always be damp. For the best ground, if you want to do it well, bury the rod or a large piece of copper screening in a mixture of marble dust and charcoal. Ask your electrical supplier to recommend the proper heavy ground wire.

b. Keep all ground wires as short as possible and be certain all connections are clean and tight.

Safety and preventative maintenance go hand-in-hand to keep your equipment in goodworking order and to keep your equipment ..... period!

Addendum: Under paragraph (a) of Antennas, after the last sentence should be - Even lightening arrestors, while they are a good idea, will not always offer sufficient protection to your valuable equipment.

"You see, hair acts like a filter to eliminate interfering audio components."

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